VIA EMAIL

August 24, 2012 File No. 04.0029307.00



Ms. Amy Daigneault Pretreatment Coordinator Lowell Regional Wastewater Utility 451 First St. Blvd. (Rte 110) Lowell, Massachusetts 01850

Re: Monthly Self Monitoring Report

July 2012

Merrimack Station

Public Service Company of New Hampshire

Bow, New Hampshire

Dear Ms. Daigneault:

On behalf of Public Service Company of New Hampshire (PSNH), GZA GeoEnvironmental, Inc. (GZA) is pleased to submit the attached **Self-Monitoring Report** (SMR) for the period July 1, 2012 through July 31, 2012. This SMR is intended to satisfy Conditions 7 and 8 of the Interim Discharge Authorization (IDA) issued to PSNH by the Lowell Regional Wastewater Utility (LRWU), dated March 29, 2012. Wastewater flow was approximately 80,000 gallons for the monitoring period and was estimated based on the actual number of tanker trucks sent to LRWU from July 1, 2012 through July 31, 2012 and tanker capacity.

The attached **SMR Summary Sheet** summarizes the analytical results for all required parameters as outlined in Condition 8 of the IDA. The attached **Table 1** compares the results to the LRWU's Local Sewer Discharge Limits. The results indicate that pollutant concentrations were within the limits. The analysis of the softened Stream B samples collected (refer to the attached **Analytical Data Report** for Stream B) on July 12, 2012 and July 24, 2012 was performed in accordance with the United States Environmental Protection Agency (EPA) draft Standard Operating Procedure (SOP) for trace metals analysis of flue gas desulfurization (FGD) wastewater. The SOP is described below.

Also included with this monthly report is the **Analytical Data Reports** for the softened Stream A samples collected on July 19, 2012 and July 27, 2012. This waste stream was not transported to LRWU in the month of July 2012, but the analytical data reports are being provided as a courtesy.

ANALYTICAL DISCUSSION

FGD wastewater requires specialized analytical techniques to overcome matrix interferences for analysis of certain trace metals. To assist you in evaluating this issue further, we offer an excerpt below from the EPA web site and a link to their draft SOP for trace metals analysis of FGD wastewater that contains further guidance.

380 Harvey Road Manchester New Hampshire 03103-3347 603-623-3600 FAX 603-624-9463 www.gza.com

LABORATORY ANALYSIS OF FGD WASTEWATER



Wastewater from FGD systems can contain constituents known to cause matrix interferences. EPA has observed that, during inductively coupled plasma—mass spectrometry (ICP-MS) analysis of FGD wastewater, certain elements commonly present in the wastewater may cause polyatomic interferences that bias the detection and/or quantization of certain elements of interest. These potential interferences may become significant when measuring trace elements at concentrations in the low parts-per-billion range.

As part of a recent sampling effort for the steam electric power generating effluent guidelines rulemaking, EPA developed an SOP that was used in conjunction with EPA Method 200.8 to conduct ICP-MS analyses of FGD wastewater. The SOP describes critical technical and quality assurance procedures that were implemented to mitigate anticipated interferences and generate reliable data for FGD wastewater. EPA regulations at 40 CFR 136.6 already allow the analytical community flexibility to modify approved methods to lower the costs of measurements, overcome matrix interferences, or otherwise improve the analysis. The draft SOP developed for FGD wastewater takes a proactive approach toward looking for and taking steps to mitigate matrix interferences, including using specialized interference check solutions (i.e., a synthetic FGD wastewater matrix). EPA's draft SOP is being made available to laboratories contemplating ICP-MS analysis of FGD wastewater, either for adoption as currently written or to serve as a framework for developing their own laboratory-specific SOPs. For further information, see:

• Standard Operating Procedure: Inductively Coupled Plasma/Mass Spectrometry for Trace Element Analysis in Flue Gas Desulfurization Wastewaters (30 pp, 174K), http://water.epa.gov/scitech/wastetech/guide/upload/steam_draft_sop.pdf, EPA May 2011.

Considering that specialized analytical techniques are necessary to overcome matrix interference for certain analysis of trace metals in FGD wastewater, we recommend any analysis on FGD wastewater be conducted in accordance with the EPA draft SOP for trace metals analysis of FGD wastewater.

Should you have any questions concerning this report, please do not hesitate to contact me at (603) 232-8744.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Ronald A. Breton, P.E. Senior Principal

Ronald a. Breton

RAB:rkl

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Attachments: Self-Monitoring Report

Analytical Data Reports



LOWELL REGIONAL WASTEWATER UTILITY Industrial Sewer User Self-Monitoring Report Summary Sheet

Facility Information: Company Name Public Service of New Hampshire	NA (Interim Discharge
Facility Address 97 River Road Bow, New Hampshire	Permit No. Authorization)
Facility Contact Bradley Owens Telephone	e (603) 224-4081
Use A Separate Summary Sheet For Each Monitoring F	Point
	ittal Date August 24, 2012
Reporting Period (circle applicable): Baseline Annually Semi-Annually Qua	nrterly Monthly Re-Sample
Reporting Period Start Date July 1, 2012 Reporting Period En	d Date July 31, 2012
Sample Analysis: Certified Analytical Lab _ Eastern Analytical, Inc. (EAI)	
Authorized Rep. Lorraine Olashaw Certification	on No. 1012
Analytical Sub-Contractor Frontier Global Sciences Certification	on No. E87575
Sample Collection: Sampler (Lab/Self/Other) Paul Pepler, GZA	
Sample Type(s) (circle all that apply): Grab Time Compos	site Flow Composite
Grab Sampling: Sample Date _7/12/2012; 7/24/2012 Sample T	Time _12:45 pm; 3:15pm
7.85; pH (Standard Units) 7.28 Instantaneous Flow Rate (GF	PM) _N/A
Composite Sampling: Start Date/Time N/A Stop Date/Ti	me _N/A
No. Aliquots N/A Aliquot Volume N/A Sample	e Volume N/A
Flow Data: Sampling Interval Volume (Gal) N/A Daily Flow Rate	8,889 (Average of discharge days)
Stream A: 0, Stream B: 0 Monitoring Period Industrial Wastewater Flow (Gal) Softened Stream B: 80,000	[] Meter [X] Estimate
Monitoring Period Start Date July 1, 2012 Monitoring Period En	d DateJuly 31, 2012

Refer to Self-Monitoring Report Instructions for details on completing this SMR Summary Sheet

LOWELL REGIONAL WASTEWATER UTILITY Industrial Sewer User Self-Monitoring Report Summary Sheet

Parameter	Analysis Date	Result (mg/L)	Parameter	Analysis Date	Result (mg/L)
BOD			Copper		
COD	7/17/2012	250	Cyanide (Total)	7/18/2012	<0.01
O&G 413.1/1664			Fluoride		
rss			Lead	7/24/2012	0.00619
OC *			Mercury	7/23/2012	0.000940
TO ** 624 / 8260B - 625 / 8270			Molybdenum		
lluminum			Nickel		
Intimony			Nitrogen (Kjeldahl)		
Arsenic	7/24/2012	0.0140	Phenols (Total)		
3arium			Selenium		
Beryllium			Silver	7/26/2012	<0.00200
Sadmium	7/26/2012	0.00332	Thallium		
Chromium (Hexavalent)			Zinc		
D = Biochemical Oxygen Dem				Total Suspended Solids TTC cific indicator of water quality. TC	
bon present as well as the inor TO's = Summation of all quant latile Organic Compounds), SV Zero Discharge / Self-I	the amount of carbon by ganic carbon (IC). Subtratifiable values greater the VOC's (Semi-Volatile On Monitoring (initial)	ound in an organic compound acting the inorganic carbon from 0.01 mg/L for toxic organics ganic Compounds). PCB's, Vinfapplicable): er from permitted processors.	G = Oil & Grease TSS = and is often used as a non-spe om the total carbon yields TOC. Is listed in 40 CFR 413.02(i). TOC's and SVOC's shall be analycesses has been discharge.	cific indicator of water quality. To	ated Biphenyls), VOC's 24, and 625, respective e monitoring peri
D = Biochemical Oxygen Demic (Total Organic Carbon) = is bon present as well as the inor rO's = Summation of all quant latile Organic Compounds), SV. Zero Discharge / Self-II No inc. No sa	the amount of carbon by ganic carbon (IC). Subtr titiable values greater the VOC's (Semi-Volatile On Monitoring (initial in dustrial wastewate ampling has been	ound in an organic compound acting the inorganic carbon from 10.01 mg/L for toxic organics carbon from 10.01 mg/L for toxic organics compounds). PCB's, Vol. 15 applicable): The form permitted process of the permitted pro	a G = Oil & Grease TSS = and is often used as a non-spe om the total carbon yields TOC. Is listed in 40 CFR 413.02(i). TOC's and SVOC's shall be analycesses has been discharged sewer discharges du	cific indicator of water quality. TC 'O's include PCB's (Poly-Chlorini yzed using EPA Methods 608, 6:	OC measures both the totaled Biphenyls), VOC's 24, and 625, respective emonitoring period

Bradley Owens Station Manager

Printed Name of Authorized Representative Title

8/23/2012

Signature of Authorized Representative Date

TABLE 1 SUMMARY OF SOFTENED STREAM B CONCENTRATIONS COMPARED TO LOWELL SEWER DISCHARGE LIMITS

Public Service Company of New Hampshire Merrimack Station Bow, New Hampshire

PARAMETER	LOWELL SEWER DISCHARGE LIMITS (mg/L)	SOFTENED STREAM B RESULTS 7/12/2012 (mg/L)	SOFTENED STREAM B RESULTS 7/24/2012 (mg/L)
Alkalinity	-	No Data	8,600
Aluminum	24.69	No Data	< 0.804
Antimony	-	No Data	0.00730
Arsenic	0.556	0.0140	No Data
Barium	-	No Data	1.910
Cadmium	0.056	0.00332	No Data
Calcium	-	767.000	22,400.000
Chloride	-	No Data	84,000
COD	-	250	No Data
Cyanide (T)	1.895	< 0.01	No Data
Fluoride	-	No Data	<5
Iron	-	No Data	< 2.010
Lead	0.857	0.00619	No Data
Magnesium	-	738.000	2,840.000
Manganese	-	No Data	0.803
Mercury	0.004	0.000940	No Data
Nitrate	-	No Data	910
Nitrate+Nitrite	-	No Data	921
рН	5.0-9.5	7.85	7.28
Silica	-	No Data	43
Silver	0.053	< 0.00200	No Data
Sodium	-	33,000.000	34,200.000
Sulfate	-	No Data	1,600
TDS	-	No Data	160,000
TSS	-	No Data	14,000
Boron	-	No Data	3,040.000
Potassium	-	No Data	474.000
Bromide	-	No Data	1,400

ANALYTICAL DATA REPORTS

STREAM B



Paul Pepler GZA GeoEnvironmental, Inc. (NH) 380 Harvey Road Manchester, NH 03103



Subject: Laboratory Report

Eastern Analytical, Inc. ID:

112196

Client Identification:

PSNH-MK

Date Received: 07/13/2012

Dear Mr. Pepler:

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted

< : "less than" followed by the reporting limit

> : "greater than" followed by the reporting limit

%R: % Recovery

Eastern Analytical Inc. maintains certification in the following states. Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director # of pages (excluding cover letter)



EAI ID#: 112196

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Temperature upon receipt (°C): 4.5

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Date Date Sample % Dry

Lab ID Sample ID Received Sampled Matrix Weight Exceptions/Comments (other than thermal preservation)

112196.01 Softened Stream B Wastewater 7/13/12 7/12/12 aqueous Adheres to Sample Acceptance Policy

112196.02 Field Blank 7/13/12 7/12/12 aqueous Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitibility, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater: Inorganics, 19th Edition, 1995; Microbiology, 20th Edition, 1998
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EALID#: 112196

Client: GZA GeoEnvironmental, Inc. (NH)

PSNH-MK Client Designation:

Sample ID:

Softened Stream B

Wastewater

Lab Sample ID:

112196.01

Matrix:

aqueous

Date Sampled:

7/12/12

Date Received:

7/13/12

Cyanide Total COD

< 0.01 250 **Analysis**

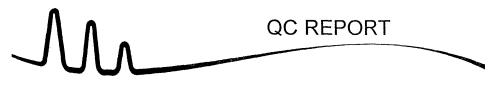
Date Time Method Analyst

mg/L mg/L

Units

7/17/12 12:00

7/18/12 10:00 4500CNE KJR H8000 SCW



EAI ID#: 112196

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Parameter Name	Blank	LCS	LCSD	Date of Units Analysis	Limits RPD Method
Cyanide Total	< 0.01	0.24 (95 %R)	NA		85 - 115 20 4500CNE
COD	< 10	100 (101 %R)	98 (98 %R) (3 RPD)		85 - 115 20 H8000

MS/N	ISD	MS/MSD				Date of			
Parameter Name Parei	it ID	Parent	Matrix Spike	MSD	Units	Analysis	Limits	RPD	Method
Cyanide Total 1121 COD 1122		0.03 < 10	0.26 (92 %R) 54 (124 %R)	. () ()	_				

Samples were analyzed within holding times unless noted on the sample results page.

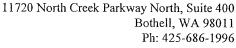
Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.

Exceptions to the above statements are flagged or noted above or on the QC Narrative page.

^{*/!} Flagged analyte recoveries deviated from the QA/QC limits.



Fx: 425-686-3096



10 August 2012

Jeff Gagne Eastern Analytical, Inc 25 Chenell Drive Concord, NH 03301

RE: Merrimack Station 200.8

Ly Siska

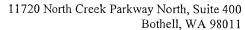
Enclosed are the analytical results for samples received by Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Project Manager





Ph: 425-686-1996 Fx: 425-686-3096

ANALYTICAL REPORT FOR SAMPLES

Laboratory: Frontier Global Sciences, Inc.

SDG:

Client: Eastern Analytical, Inc

Project: Merrimack Station 200.8

Sample ID	Lab ID	Matrix	Date Sampled	Date Received
SOFTENED STREAM B	1207218-01	Water	12-Jul-12 12:45	17-Jul-12 09:22
FIELD BLANK	1207218-02	Water	12-Jul-12 12:45	17-Jul-12 09:22

Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Ph: 425-686-1996 Fx: 425-686-3096

CASE NARRATIVE

SAMPLE RECEIPT

Samples were received at Frontier Global Sciences (FGS) on July 17th, 2012. The samples were received intact, on-ice with temperatures measured at 6.8 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total metals in accordance with EPA Method 200.8 (modified).

Samples were prepared and analyzed for total mercury in accordance with EPA Method 1631E.

ANALYTICAL ISSUES

As an additional measure of the accuracy of the methods utilized for analysis and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

A reasonable measure of the precision of the analytical methods utilized for analysis is the relative percent difference (RPD) between matrix spike and matrix spike duplicate recoveries and between laboratory control sample and laboratory control sample duplicate recoveries. All of the relative percent differences were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Liz Siska, Project Manager

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Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lig Siska

Bothell, WA 98011 Ph: 425-686-1996

Ph: 425-686-1996 Fx: 425-686-3096



CHAIN OF CUSTODY FORMS

FGS Work Order: 12072	118			Samp	le Receipt	Checklist	;			Frontier Global Sciences					
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Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





ANALYTICAL RESULTS

SOFTENED STREAM B

Matrix: Water

Laboratory ID: <u>1207218-01</u>

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Arsenic	14.0	0.51	1.50	μg/L	10	F207209	2G25004	07/24/12	EPA 200.8	
Cadmium	3.32	0.415	2.00	μg/L	100	F207259	2G26007	07/26/12	EPA 200.8	
Calcium	767000	324	4000	μg/L	100	F207259	2G26007	07/26/12	EPA 200.8	
Lead	6.19	0.039	0.400	μg/L	10	F207209	2G25004	07/24/12	EPA 200.8	
Magnesium	738000	17.4	250	μg/L	100	F207259	2G26007	07/26/12	EPA 200.8	
Mercury	940	8.42	50.5	ng/L	100	F207212	2G23010	07/23/12	EPA 1631E	
Silver	ND	0.600	2.00	μg/L	100	F207259	2G26007	07/26/12	EPA 200.8	U
Sodium	33000000	5700	99100	μg/L	5000	F208033	2H09002	08/08/12	EPA 200.8	

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ANALYTICAL RESULTS

FIELD BLANK

Matrix: Water

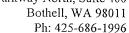
Laboratory ID: 1207218-02

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Arsenic	ND	0.05	0.15	μg/L	1	F207209	2G25004	07/23/12	EPA 200.8	U
Cadmium	ND	0.004	0.020	μg/L	1	F207259	2G26007	07/26/12	EPA 200.8	U
Calcium	ND	3	40	μg/L	1	F207259	2G26007	07/26/12	EPA 200.8	U
Lead	ND	0.004	0.040	μg/L	1	F207209	2G25004	07/23/12	EPA 200.8	U
Magnesium	ND	0.2	2.5	$\mu g/L$	1	F207259	2G26007	07/26/12	EPA 200.8	U
Silver	ND	0.006	0.020	μg/L	1	F207259	2G26007	07/26/12	EPA 200.8	U
Sodium	ND	1	20	μg/L	1	F208033	2H09002	08/08/12	EPA 200.8	U

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Fx: 425-686-3096



MATRIX DUPLICATES/TRIPLICATES

SOURCE: 1207278-03RE1

Batch: <u>F207212</u>

Sequence: 2G23010

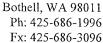
Preparation: BrCl Oxidation

Lab Number: F207212-DUP1

	Sample Concentration	Duplicate Concentration		%	RPD		
Analyte	ng/L	ng/L	MRL	RPD	Limit	Method	Notes
Mercury	245.1	238.7	50.5	2.63	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207218-01

Batch: F207209

Sequence: 2G25004

Preparation: Closed Vessel Nitric Oven Digestion

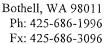
Lab Number: F207209-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Arsenic	14.01	15.150	28.03	92.6	70 - 130	EPA 200.8	
Lead	6.191	1.5150	7.631	95.1	70 - 130	EPA 200.8	

Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Arsenic	15.150	28.88	98.2	3.00	70 - 130	20	EPA 200.8	· · · · · · · · · · · · · · · · · · ·
Lead	1.5150	7.433	82.0	2.64	70 - 130	20	EPA 200.8	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207218-01

Batch: <u>F207209</u>

Sequence: 2G25004

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207209-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Arsenic	14.01	202.00	209.6	96.8	70 - 130	EPA 200.8	AS
Lead	6.191	50.500	56.61	99.8	70 - 130	EPA 200.8	AS

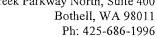
Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Arsenic	202.00	210.1	97.1	0.240	70 - 130	20	EPA 200.8	AS
Lead	50.500	56.29	99.2	0.558	70 - 130	20	EPA 200.8	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207278-03RE1

Batch: <u>F207212</u>

Sequence: 2G23010

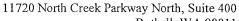
Preparation: BrCl Oxidation

Lab Number: F207212-MS/MSD1

Analyte	Sample Concentrati (ng/L)	Spike on Added (ng/L)	M Concen (ng	tration	MS % Recovery	Recovery Limits	Method	Notes
Mercury	245.1	510.00	69.	5.5	88.3	71 - 125	EPA 1631E	
Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	510.00	721.5	93.4	3.67	71 - 125	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207256-04

Batch: F207212

Sequence: 2G23010

Preparation: BrCl Oxidation

Lab Number: F207212-MS/MSD2

Analyte	Sample Concentrat (ng/L)		MS Concentra (ng/L)		MS % Recovery	Recovery Limits	Method	Notes
Mercury	1.44	5.1000	6.52		99.5	71 - 125	EPA 1631E	
Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	70	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	5.1000	6.13	92.0 6	5.11	71 - 125	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207218-01RE1

Batch: <u>F207259</u>

Sequence: <u>2G26007</u>

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207259-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Magnesium	738300	252.50	722500	-6260	70 - 130	EPA 200.8	QM-02
Calcium	766600	1515.0	755800	-709	70 - 130	EPA 200.8	QM-02
Silver	ND	1.5150	1.101	72.7	70 - 130	EPA 200.8	
Cadmium	3.321	0.80800	4.445	139	70 - 130	EPA 200.8	QM-02

Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	252.50	741700	1350	2.62	70 - 130	20	EPA 200.8	QM-02
Calcium	1515.0	776800	673	2.73	70 - 130	20	EPA 200.8	QM-02
Silver	1.5150	1.190	78.5	7.76	70 - 130	20	EPA 200.8	
Cadmium	0.80800	3.612	36.0	20.7	70 - 130	20	EPA 200.8	QM-02, QR-08

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207218-01RE1

Batch: <u>F207259</u>

Sequence: <u>2G26007</u>

Preparation: Closed Vessel Nitric Oven Digestion

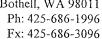
Lab Number: F207259-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Magnesium	738300	202000	950100	105	70 - 130	EPA 200.8	AS
Calcium	766600	202000	991600	111	70 - 130	EPA 200.8	AS
Silver	ND	101.00	91.18	90.3	70 - 130	EPA 200.8	AS
Cadmium	3.321	202.00	195.5	95.1	70 - 130	EPA 200.8	AS

Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	202000	929400	94.6	2.20	70 - 130	20	EPA 200.8	AS
Calcium	202000	973000	102	1.90	70 - 130	20	EPA 200.8	AS
Silver	101.00	88.96	88.1	2.46	70 - 130	20	EPA 200.8	AS
Cadmium	202.00	190.7	92.8	2.46	70 - 130	20	EPA 200.8	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207218-01RE6

Batch: <u>F208033</u>

Sequence: 2H09002

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208033-MS/MSD1

Analyte	Sample Concentrat (μg/L)		М Concen (µg/	tration	MS % Recovery	Recovery Limits	Method	Notes
Sodium	32990000	0 505.00	33570	0000	115000	75 - 125	EPA 200.8	QM-02
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	505.00	33360000	73000	0.633	75 - 125	20	EPA 200.8	QM-02

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207218-01RE6

Batch: <u>F208033</u>

Sequence: <u>2H09002</u>

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208033-MS/MSD2

Analyte	Sample Concentrat (µg/L)	•	Conce	MS ntration g/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	3299000	0 1001000	0 434	80000	105	75 - 125	EPA 200.8	AS
Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	10010000	43820000	108	0.771	75 - 125	20	EPA 200.8	AS

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F207209</u>

Sequence: 2G25004

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207209-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (μg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Arsenic	15.000	13.65	91.0	85 - 115	EPA 200.8	
Lead	1.5000	1.483	98.8	85 - 115	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Arsenic	15.000	13.12	87.4	4.01	85 - 115	20	EPA 200.8	
Lead	1.5000	1.422	94.8	4.20	85 - 115	20	EPA 200.8	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F207212</u>

Sequence: 2G23010

Preparation: BrCl Oxidation

Lab Number: F207212-BS/BSD1

LCS Source: NIST 1641D

	Spike	LCS	LCS			
Analyte	Added (ng/L)	Concentration (ng/L)	% Recovery	Recovery Limits	Method	Notes
Mercury	15.679	14.98	95.5	80 - 120	EPA 1631E	

Analyte	Spike Added (ng/L)	LCSD Concentration (ng/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	15.679	15.31	97.6	2.17	80 - 120	24	EPA 1631E	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F207259</u>

Sequence: 2G26007

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207259-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Magnesium	250.00	243.3	97.3	85 - 115	EPA 200.8	
Calcium	1500.0	1407	93.8	85 - 115	EPA 200.8	
Silver	1.5000	1.495	99.7	85 - 115	EPA 200.8	
Cadmium	0.80000	0.797	99.6	85 - 113	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	250.00	239.2	95.7	1.73	85 - 115	20	EPA 200.8	·
Calcium	1500.0	1392	92.8	1.10	85 - 115	20	EPA 200.8	
Silver	1.5000	1.532	102	2.46	85 - 115	20	EPA 200.8	
Cadmium	0.80000	0.755	94.4	5.38	85 - 113	20	EPA 200.8	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F208033</u>

Sequence: 2H09002

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208033-BS/BSD1

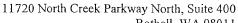
LCS Source: Blank Spike

	Spike Added	LCS Concentration	LCS %	Recovery	***************************************	
Analyte	$(\mu g/L)$	(μg/L)	Recovery	Limits	Method	Notes
Sodium	500.00	471	94.3	80 - 120	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	500.00	473	94.6	0.308	80 - 120	20	EPA 200.8	

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PREPARATION BLANKS

Instrument: Hg2600-1

Sequence: <u>2G23010</u>

Preparation: BrCl Oxidation

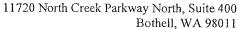
Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F207212-BLK1	Mercury	0.06	0.50	ng/L	F207212	EPA 1631E	U
F207212-BLK2	Mercury	0.02	0.50	ng/L	F207212	EPA 1631E	U
F207212-BLK3	Mercury	-0.003	0.50	ng/L	F207212	EPA 1631E	U
F207212-BLK4	Mercury	0.02	0.50	ng/L	F207212	EPA 1631E	QB-04, U
F207212-BLK5	Mercury	0.28	0.52	ng/L	F207212	EPA 1631E	U, QB-06

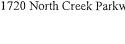
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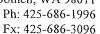
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PREPARATION BLANKS

Instrument: ICPMS-6

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Sequence: 2G25004

Preparation: Closed Vessel Nitric Oven Digestion

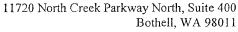
Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F207209-BLK1	Arsenic	0.04	0.15	μg/L	F207209	EPA 200.8	U
F207209-BLK1	Lead	-0.0005	0.040	μg/L	F207209	EPA 200.8	U

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Ph: 425-686-1996 Fx: 425-686-3096



PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2G26007

Preparation: Closed Vessel Nitric Oven Digestion

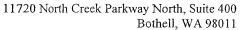
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Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F207259-BLK1	Magnesium	0.1	2.5	μg/L	F207259	EPA 200.8	U
F207259-BLK1	Calcium	1	40	μg/L	F207259	EPA 200.8	U
F207259-BLK1	Silver	-0.001	0.020	μg/L	F207259	EPA 200.8	U
F207259-BLK1	Cadmium	0.001	0.020	μg/L	F207259	EPA 200.8	U

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Ph: 425-686-1996 Fx: 425-686-3096

PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2H09002

Preparation: Closed Vessel Nitric Oven Digestion

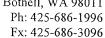
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Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F208033-BLK1	Sodium	4	20	μg/L	F208033	EPA 200.8	U

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Notes and Definitions

U	Analyte included in the analysis, but not detected
QR-08	The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
QM-02	The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 1 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QB-06	The blank was preserved to 5% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
DET	Analyte Detected
MDL	Minimum Detection Limit
MRL	Minimum Reporting Limit
ND	Analyte Not Detected at or above the reporting limit
wet	Sample results reported on a wet weight basis
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
RSD	Relative Standard Deviation

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BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS

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Sampling Date / Time If Composite, Indicate Both tart & Finish Date / Time 13/13. 12:45 p	MATRIX (SEE BELOW)	AB/*COMPOSITE	EX 524.2 MTBE ONLY	24 VTICS IE EDB DBCP	EX HALOS	MEGRO MAVPH	SYTICS PAH	S \	MAEPH O	C	1664	TCLP	Me						AN						0		ΞR		
Sampling Date / Time If Composite, NDICATE BOTH TART & FINISH DATE / TIME	ATRIX (SEE BELOW)	AB/*COMPOSITE	EX 524.2 MTBE ONLY	24 VTICS IE EDB DBCP	EX HALOS	MEGRO MAVPH	SVTICS PAH	1.7	MAEPH	a	1664	<u></u>						. Рноѕ.		200	1413	ULFIDE							
10 10 10 10 10 10 10 10 10 10 10 10 10 1	0000	<u>წ</u>	524.2 524.2 BT	8260B 6	80218 BT	8015B GRO	8270D 625 ABN A BN	17 0018Hd1	8015B DRO MEDRO	PEST 608 PCB 608 PCB 608 PEST 8081A PCB 8087	OIL & GREASE 1664 TPH	TCLP 1311 ABN METAL VOC PEST HERB	DISSOLVED METALS (LIST BELOW	TOTAL METALS (LIST BELOW)	TS TSS TDS SPEC. COM	BR CI F 504 NO ₂ NO ₃ NO ₃ NO ₂	. 80D CB0D T. Aux.	TKN NH ₃ T. Phos. O	pH T. RES. CHLORINE	COD PHENOLS TOC	REACTIVE CHAINE TOTAL SULFIDE	FLASHPOINT GONTABILITY TASH CONTABILITY	FECAL COLFORM FECAL COLFORM	ENTEROCOCCI HETEROTROPHIC PLATE COUNT				# OF CONTAINERS	Notes MeOH Vial #
	(ING W	ATER;																											
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professional laboratory services

0.4411777

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)



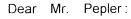
Paul Pepler GZA GeoEnvironmental, Inc. (NH) 380 Harvey Road Manchester, NH 03103



Eastern Analytical, Inc. ID: 112537

Client Identification: PSNH-MK

Date Received: 7/25/2012



Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted

< : "less than" followed by the reporting limit

> : "greater than" followed by the reporting limit

%R: % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

8.16.12

28

of pages (excluding cover letter)

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Temperature upon receipt (°C): 5

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Sample % Dry Date Date

Sample ID

Received Sampled Matrix Weight Exceptions/Comments (other than thermal preservation)

112537.01 Softened Stream B WW

Lab ID

7/25/12 7/24/12 aqueous Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitibility, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis. All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater: Inorganics, 19th Edition, 1995; Microbiology, 20th Edition, 1998
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 2nd edition, 1992



Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Sample ID: Softened Stream B

WW

Lab Sample ID: 112527 01

 Lab Sample ID:
 112537.01

 Matrix:
 aqueous

 Date Sampled:
 7/24/12

 Date Received:
 7/25/12

Date Received: 7/25/12

Solids Suspended 14000
Solids Dissolved 160000
Fluoride <5
Bromide 1400
Sulfate 1600
Chloride 84000
Nitrite-N 11

Nitrate-N

Alkalinity Total (CaCO3)

Alk. Bicarb (as CaCO3)

Alk. Carbonate (as CaCO3)

< 1

Analysis Time Method Analyst Units Date 7/26/12 8:00 mg/L 2540D JCC mg/L 7/27/12 10:37 2540C JCC mg/L 8/01/12 17:27 300.0 KL mg/L 7/31/12 12:35 300.0 KL mg/L 7/31/12 12:35 300.0 KL mg/L 7/26/12 13:24 4500CIE KD mg/L 7/26/12 10:19 353.2 KD mg/L 7/26/12 11:19 353.2 KD mg/L 7/31/12 10:00 2320B SEL mg/L 7/31/12 10:00 2320B SEL

7/31/12 10:00

2320B SEL

mg/L

Fluoride: The reporting limit for Fluoride was raised due to the matrix.

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Parameter Name	Blank		LCS			LCSD	ι	Jnits	Date of Analysi	Limits	RPD	Method
Solids Suspended	< 5	94	(94 %R)	1	00 (100) %R) (6 R	PD)	mg/L	7/26/12	90 - 110	20	2540D
Solids Dissolved	< 5	990	(99 %R)				NA	mg/L	7/27/12	85 - 115	5 20	2540C
Fluoride	< 0.1	2.1 (107 %R)	:	2.2 (108	3 %R) (1 R	PD)	mg/L	7/31/12	90 - 110	20	300.0
Bromide	< 0.1	2.1 (107 %R)	:	2.2 (109	9 %R) (2 R	PD)	mg/L	7/31/12	90 - 110	20	300.0
Sulfate	< 1	21 (103 %R)		21 (103	3 %R) (0 R	PD)	mg/L	7/31/12	90 - 110	20	300.0
Chloride	< 1	25	(99 %R)		25 (101	%R) (2 R	PD)		7/26/12	90 - 110	20	4500CIE
Nitrite-N	< 0.5	5.3 (106 %R)		5.3 (106	6 %R) (0 R	PD)	mg/L	7/26/12	90 - 110	20	353.2
Nitrate-N	< 0.5	4.9	(98 %R)		4.9 (97	′ %R) (1 R	PD)	mg/L	7/26/12	90 - 110	20	353.2
Alkalinity Total (CaCO3)			NA				NA	mg/L	7/31/12		20	2320B
Alk. Bicarb (as CaCO3)			NA				NA	mg/L	7/31/12		20	2320B
Parameter Name	MS/MSD Parent ID	MS/MSD Parent	Matrix Sp	ike		MSD		Uni	Date of ts Analysis	Limits	RPD	Method
Solids Suspended		NA		NA		NA		mg	/L 7/26/12		20	2540D
Solids Dissolved		NA		NA		NA		_	/L 7/27/12		20	2540C
Fluoride	112599.05	0.9	3.0 (107	%R)	3.0 (1	06 %R) (1	RPD)	_	/L 7/31/12	85-120	20	300.0
Bromide	112537.01	1400	1800 (94	%R)	,	NA	·	_	/L 7/31/12	80-120	20	300.0
Sulfate	112537.01	1600	6000 (109	%R)	6000 (110 %R) (1 RPD)) mg	/L 7/31/12	89-120	20	300.0
Chloride	112541.04	9	19 (101	%R)	19 (9	95 %R) (6 I	RPD)		/L 7/26/12	80-12	20	4500CIE
Nitrite-N		NA		NA		NA		mg	/L 7/26/12		20	353.2
Nitrate-N	112541.04	< 0.5	9.4 (91	%R)	9.4 (91 %R) (0	RPD)	mg	/L 7/26/12	80-12	0 20	353.2
Alkalinity Total (CaCO3)		NA		NA		NA		mg	/L 7/31/12		20	2320B
Alk. Bicarb (as CaCO3)		NA		NA		NA		mg	/L 7/31/12		20	2320B
Parameter Name	Duplicate Parent ID	•	olicate arent		D	uplicate		Units	Date of Analysis		RPD	Method
Solids Suspended	112551.02		70		70	(0 RPD)		mg	/L 7/26/12		20	2540D
Solids Dissolved	112537.01	16	0000		160000	(1 RPD)		mg	/L 7/27/12		20	2540C
Fluoride			NA			NA		mg	/L 7/31/12		20	300.0
Bromide			NA			NA		mg	/L 7/31/12		20	300.0
Sulfate			NA			NA		mg	/L 7/31/12		20	300.0
Chloride			NA			NA		mg	/L 7/26/12		20	4500CIE
Nitrite-N			NA			NA		mg	/L 7/26/12		20	353.2
Nitrate-N			NA			NA		_	/L 7/26/12		20	353.2
Alkalinity Total (CaCO3)	112537.01		8600		7600	(12 RPD)		_	/L 7/31/12		20	2320B
Alk. Bicarb (as CaCO3)	112537.01		8600			(12 RPD)		•	/L 7/31/12		20	2320B

Samples were analyzed within holding times unless noted on the sample results page.

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.

Exceptions to the above statements are flagged or noted above or on the QC Narrative page.

^{*/!}Flagged analyte recoveries deviated from the QA/QC limits.

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Sample ID:

Softened Stream B

WW

Lab Sample ID:

112537.01

Matrix:

aqueous

Date Sampled:

7/24/12

Date Received:

Silica (calculated)

7/05/40

7/25/12

43

Analytical Matrix

Units

Date of

Analysis Method Analyst

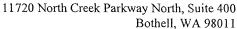
AqTot

mg/L

7/30/12

200.8 DS

Silica: Silicon (Si) was analyzed by Method 200.8 and converted to silica (SiO2) by calculation. All the silicon was assumed to be tied up as silica therefore the silicon concentration in mg/L was multiplied by 2.139 to convert to silica. Mg/L silicon * 2.139 = mg/L silica.





Fx: 425-686-3096

15 August 2012

Jeff Gagne Eastern Analytical, Inc 25 Chenell Drive Concord, NH 03301

RE: Merrimack Station 200.8

Ty Siska

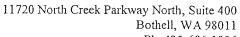
Enclosed are the analytical results for samples received by Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Project Manager





ANALYTICAL REPORT FOR SAMPLES

Laboratory: Frontier Global Sciences, Inc.

SDG:

Client: Eastern Analytical, Inc

Project: Merrimack Station 200.8

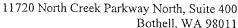
Sample ID	Lab ID	Matrix	Date Sampled	Date Received
112537.01 Softened Stream B WW	1207401-01	Water	24-Jul-12 15:15	27-Jul-12 12:29

Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Liz Siska, Project Manager

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CASE NARRATIVE

SAMPLE RECEIPT

Samples were received at Frontier Global Sciences (FGS) on July 28th, 2012. The samples were received intact, on-ice with temperatures measured at 9.2 degrees Celsius. Ice packs had thawed upon arrival.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total metals in accordance with EPA Method 200.8 (modified).

ANALYTICAL ISSUES

As an additional measure of the accuracy of the methods utilized for analysis and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

A reasonable measure of the precision of the analytical methods utilized for analysis is the relative percent difference (RPD) between matrix spike and matrix spike duplicate recoveries and between laboratory control sample and laboratory control sample duplicate recoveries. All of the relative percent differences were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

Frontier Global Sciences, Inc.

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Liz Siska, Project Manager

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CHAIN OF CUSTODY FORMS

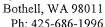
FGS Work Order: 12.0	7-40	<u> </u>		Sample	e Receipt	Checklist				Fro	ntier	Global Scier	nces
Client: Fester Aroly! Project: # of Coolers Received:! Tracking/Airbill Number(s) Thermal Preservation:	Recei Samp	ved By: ples Arrived I (E X	(D) By: _X H0 5	Shipping Si	Logge erviceCo	d By: <u>APM</u> urier <u>H</u> and	B	Other (S	Labele	ed By:	4 <i>7</i> 2	1 <u>113</u>	//N
Cooler Information: The coolers do not appear	to be tamp	ered with:	y/N 	Cor	nments	Thermometer			" c]	CF: Cooler 7:	*C	Cooler 10:	°C
Custody Seals are present Custody seals signed by:	and intact:		N/A	None	usci	Cooler 3: *C		looler 5: looler 6:	-	Cooler 8: Cooler 9:		Coaler 11: Coaler 12:	*C *C
Chain of Custody: Sample ID/Description: Date/Time of collection: Sampled by: Preservation type: Requested analyses; Required signatures: Internal COC required: Client Contacted: Anomalies/Non-conforma & Texpender Secret Completed Samples recon not opened with	nces: delayed thouse Ved a	by 103 d = 3 f 11:5	yan	pocks Yourer	Sample conta Sample labels Sample ID on Correct samples rece Sample volun Correct prese pH of preserv	are present and I container matche le containers used ived within holdin ne sufficient for re cryative used for med samples verifie	s COC: : g time queste equest ed and	s: ed analyse ed analyse recorded:	S:	Y/N Y Y Y Y Y V/A	Cı	omments	
FGS Sample Receipt Check			***************************************		Washington and the second		~					***************************************	

Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Liz Siska, Project Manager

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CHAIN OF CUSTODY FORMS

	nain of Custody I Air, Water, Se Hydr		ant and	i Anim	al Tis		t:		11720 North Creek Park Bothell, WA Phone: 425-686 Fax: 425-686	98011 -1996	
FRONTIER GLOBAL SCIENCES		Page				1207	-4 c	1	info@FrontierG http://www.FrontierG	S.com	
Client: EASTERY ALLEYTICAL INC. Conta	oct: Uell Gas =: 1003 - 2 Paxe : Uell Gas	9 <u>0</u> 20525			(6)		yses Red	questec	ed FGS PM: LIZ SISKA Date:		
Coucers NH 65354 E-ma Project Name Contr	ll: <u>T&(C&&)</u> act/PO: 3919	earbbs c 2	gm		Other (%)	hed /			TAT (business days):20 15 10 5 4 3 2 24	hrs.	
Report To: SAME Invoid	e To:		7	5	ਝ	80			(For TAT < 10 days, conta- Surcharges apply for expedited		
Address: SAME Addre				Field Filtered (Y/N)	Field Preserved: HINO, HCI BrCI (कियादम् (अक्टाक्ष्य) भ्राप्तातम्		THE PARTY NAMED IN COLUMN	Saturday delivery? (If yes, please contact PN)		
Phone: 453-258-4525 Fax: Phone			g g	Ge	양무	377			EDD DY DN		
E-mail: Ostaron Sarvice (Aeniloss, CV) E-ma			- 를		7 Pr	7 8		l	QA 🗆 Standard 🗆 His	<u>in</u>	
No. Engraved Sample ID	# of Bottles Matrix	Date & Time	Sampled By	Fiek	Fiek				Comments		
1 1/12557.01 Softened Stream	1	712413				X			metals:		
2 B WW									Na, Ma, ča, K, B, Al, M		
3		angenessor, galays, galandir. an anananananan							1 100, 115, 00,		
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6				j					1 100 200 1,0	1	
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12											
For Laboratory Use Only	Matrix Codes	: Reling	rished 6	/: ~		Received	By:		Received By:	-	
COC Seal: Comments:	FW: Fresh Water WW: Waste Water	7/2	Jule -	Mark	an	UP	<		Received By:	- 1	
Cooler Temp: 9.2°C 12 146 599-12	SB: Sea and Brackish W SS: Soil and Sediment	ater Names	N 2.	k Ma	Henry	Name:			Name: Gree Dudge		
Carrier: 270- 7107	ssue Organi	zation:	gatta x .	بيدالارزيدة	Organizat	ion:		Organization:			
45								fas			
VTSR: 150 150		Date & Time: Date & Time: Date & Time: 7/27/3						430			
# of Coolers:	Tracki	ng numb									
Sample Disposal: □ Return (shipping fees may apply)	ole Disposat: eturn (shipping fees may apply)						By signing, you declare that you agree with FGS' terms and conditions, you authorize FGS to perform the specified analyses.				
☐ Standard Disposal — 30 Days after report ☐ Retain for weeks after report (storage for	turn (shipping fees may apply)						Customer Approval: 11. 2014-Marlono Date:				

Frontier Global Sciences, Inc.

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Liz Siska, Project Manager

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Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096



ANALYTICAL RESULTS

112537.01 Softened Stream B WW

Matrix: Water

Laboratory ID: <u>1207401-01</u>

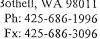
Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Aluminum	ND	40.2	804	μg/L	200	F208014	2H05006	08/03/12	EPA 200.8	U
Antimony	7.30	0.623	2.01	μg/L	100	F208071	2H10005	08/09/12	EPA 200.8	
Barium	1910	3.48	40.2	μg/L	200	F208014	2H05006	08/03/12	EPA 200.8	
Boron	3040000	3610	30100	μg/L	10000	F208150	2H14010	08/14/12	EPA 200.8	
Calcium	22400000	13500	201000	μg/L	5000	F208014	2H05006	08/03/12	EPA 200.8	
Iron	ND	123	2010	μg/L	200	F208014	2H05006	08/03/12	EPA 200.8	U
Magnesium	2840000	2960	20100	μg/L	10000	F208124	2H13011	08/13/12	EPA 200.8	
Manganese	803	2.53	40.2	μg/L	200	F208014	2H05006	08/03/12	EPA 200.8	
Potassium	474000	820	8040	μg/L	200	F208014	2H05006	08/03/12	EPA 200.8	
Sodium	34200000	5010	100000	μg/L	5000	F208014	2H05006	08/03/12	EPA 200.8	

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Liz Siska, Project Manager

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SOURCE: 1207373-02

Batch: F208014

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208014-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	1687	505.00	2221	106	70 - 130	EPA 200.8	
Aluminum	28.3	151.50	200.1	113	70 - 130	EPA 200.8	
Potassium	400	303.00	730	109	70 - 130	EPA 200.8	
Calcium	3021	1515.0	4521	99.0	70 - 130	EPA 200.8	
Manganese	11.19	6.0600	17.26	100	70 - 130	EPA 200.8	
Iron	125	505.00	598	93.7	70 - 130	EPA 200.8	
Barium	3.55	10.100	13.68	100	70 - 130	EPA 200.8	

Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	505.00	2227	107	0.241	70 - 130	20	EPA 200.8	
Aluminum	151.50	189.3	106	5.56	70 - 130	20	EPA 200.8	
Potassium	303.00	719	105	1.52	70 - 130	20	EPA 200.8	
Calcium	1515.0	4525	99.3	0.0821	70 - 130	20	EPA 200.8	
Manganese	6.0600	17.34	101	0.436	70 - 130	20	EPA 200.8	
Iron	505.00	595	93.2	0.394	70 - 130	20	EPA 200.8	
Barium	10.100	13.37	97.2	2.27	70 - 130	20	EPA 200.8	

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Liz Siska, Project Manager

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SOURCE: 1207373-02

Batch: <u>F208014</u>

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208014-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	1687	20200	22380	102	70 - 130	EPA 200.8	AS
Aluminum	28.3	2020.0	2107	103	70 - 130	EPA 200.8	AS
Potassium	400	20200	21600	105	70 - 130	EPA 200.8	AS
Calcium	3021	20200	24250	105	70 - 130	EPA 200.8	AS
Manganese	11.19	202.00	217.4	102	70 - 130	EPA 200.8	AS
Iron	125	1010.0	1133	99.8	70 - 130	EPA 200.8	AS
Barium	3.55	404.00	408.6	100	70 - 130	EPA 200.8	AS

Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	20200	22750	104	1.63	70 - 130	20	EPA 200.8	AS
Aluminum	2020.0	2089	102	0.856	70 - 130	20	EPA 200.8	AS
Potassium	20200	21470	104	0.583	70 - 130	20	EPA 200.8	AS
Calcium	20200	23980	104	1.13	70 - 130	20	EPA 200.8	AS
Manganese	202.00	215.5	101	0.841	70 - 130	20	EPA 200.8	AS
Iron	1010.0	1124	98.9	0.841	70 - 130	20	EPA 200.8	AS
Barium	404.00	412.0	101	0.825	70 - 130	20	EPA 200.8	AS

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SOURCE: 1207373-02RE1

Batch: F208071

Sequence: 2H10005

Preparation: Closed Vessel Nitric Oven Digestion

Antimony

Lab Number: F208071-MS/MSD1

70 - 130

20

EPA 200.8

Analyte	Sample Concentrat (μg/L)	•	Mi Concent (μg/	tration	MS % Recovery	Recovery Limits	Method	Notes
Antimony	0.110	0.80800	0.8	72	94.3	70 - 130	EPA 200.8	
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes

102

6.55

0.931

0.80800

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207373-02RE1

Batch: <u>F208071</u>

Sequence: 2H10005

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208071-MS/MSD2

Analyte	Sample Concentrat (µg/L)			ation	MS % Recovery	Recovery Limits	Method	Notes
Antimony	0.110	10.100	6.94	4	67.7	70 - 130	EPA 200.8	QM-13, AS
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Antimony	10.100	7.346	71.6	5.62	70 - 130	20	EPA 200.8	AS

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Jy Juna

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SOURCE: 1207373-02RE2

Batch: <u>F208124</u>

Sequence: 2H13011

Preparation: Closed Vessel Nitric Oven Digestion

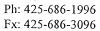
Lab Number: F208124-MS/MSD1

Analyte	Sample Concentrat (μg/L)		Concentration		MS % Recovery	Recovery Limits	Method	Notes
Magnesium	785.0	252.50	10	45	103	70 - 130	EPA 200.8	
Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	252.50	1063	110	1.71	70 - 130	20	EPA 200.8	

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SOURCE: 1207373-02RE2

Batch: <u>F208124</u>

Sequence: 2H13011

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208124-MS/MSD2

Analyte	Sample Concentrati (µg/L)	Spike on Added (µg/L)	Concer	IS ntration g/L)	MS % Recovery	Recovery Limits	Method	Notes
Magnesium	785.0	20200	22	190	106	70 - 130	EPA 200.8	AS
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	20200	22260	106	0.339	70 - 130	20	EPA 200.8	AS

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SOURCE: 1207373-02RE3

Batch: F208150

Sequence: 2H14010

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208150-MS/MSD1

Analyte	Sample Concentrat (µg/L)		М Concen (µg/	tration	MS % Recovery	Recovery Limits	Method	Notes
Boron	17.3	75.750	92	.1	98.7	70 - 130	EPA 200.8	
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Boron	75.750	82.9	86.6	10.5	70 - 130	20	EPA 200.8	

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Ly Sister





SOURCE: 1207373-02RE3

Batch: <u>F208150</u>

Sequence: 2H14010

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208150-MS/MSD2

Analyte	Sample Concentrat (µg/L)	Spike ion Added (µg/L)	MS Concentration (µg/L)		MS % Recovery	Recovery Limits	Method	Notes
Boron	17.3	816.00	83	5.2	100	70 - 130	EPA 200.8	AS
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Boron	816.00	888.0	107	6.12	70 - 130	20	EPA 200.8	AS

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Fx: 425-686-3096



LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F208014</u>

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208014-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Sodium	500.00	448	89.6	85 - 115	EPA 200.8	
Aluminum	150.00	140.9	93.9	85 - 115	EPA 200.8	
Potassium	300.00	290	96.5	85 - 115	EPA 200.8	
Calcium	1500.0	1513	101	85 - 115	EPA 200.8	
Manganese	6.0000	5.91	98.5	85 - 115	EPA 200.8	
Iron	500.00	470	93.9	85 - 115	EPA 200.8	
Barium	10.000	10.24	102	85 - 115	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	500.00	447	89.4	0.269	85 - 115	20	EPA 200.8	-
Aluminum	150.00	136.3	90.9	3.30	85 - 115	20	EPÄ 200.8	
Potassium	300.00	285	94.9	1.68	85 - 115	20	EPA 200.8	
Calcium	1500.0	1520	101	0.457	85 - 115	20	EPA 200.8	
Manganese	6.0000	5.91	98.4	0.0950	85 - 115	20	EPA 200.8	
Iron	500.00	472	94.3	0.417	85 - 115	20	EPA 200.8	
Barium	10.000	10.15	101	0.884	85 - 115	20	EPA 200.8	

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Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096

FRONTIER GLOBAL SCIENCES

LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F208071</u>

Sequence: 2H10005

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208071-BS/BSD1

LCS Source: Blank Spike

Analyte		Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Antimony		0.80000	0.769	96.2	85 - 115	EPA 200.8	
·	Spike	LCSD	LCSD		222		

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Analyte	(µg/12)	(μς/Σ)	Accestery		Zillitits	Zimit	Memod	Notes
Antimony	0.80000	0.776	97.0	0.832	85 - 115	20	EPA 200.8	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F208124

Sequence: 2H13011

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208124-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (μg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Magnesium	250.00	252.9	101	85 - 115	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	250.00	250.8	100	0.796	85 - 115	20	EPA 200.8	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F208150

Sequence: 2H14010

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208150-BS/BSD1

LCS Source: LCS

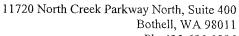
Analyte	Spike Added (μg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Boron	75.000	70.4	93.8	85 - 115	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Boron	75.000	70.0	93.4	0.530	85 - 115	20	EPA 200.8	

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

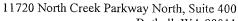
X 1 G 1 TD	A con No. 4	Tr d	MDY	¥¥ *4 -	D. C.	NAC AL LI	N7 /
Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F208014-BLK1	Sodium	0.6	20	μg/L	F208014	EPA 200.8	U
F208014-BLK1	Aluminum	1.2	4.0	μg/L	F208014	EPA 200.8	U
F208014-BLK1	Potassium	-3	40	μg/L	F208014	EPA 200.8	U
F208014-BLK1	Calcium	0.5	40	μg/L	F208014	EPA 200.8	U
F208014-BLK1	Manganese	0.001	0.20	μg/L	F208014	EPA 200.8	U
F208014-BLK1	Iron	0.05	10	μg/L	F208014	EPA 200.8	U
F208014-BLK1	Barium	0.02	0.20	μg/L	F208014	EPA 200.8	U

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Fx: 425-686-3096



PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2H10005

Preparation: Closed Vessel Nitric Oven Digestion

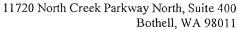
								•
	Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
ـــ	F208071-BLK1	Antimony	0.0007	0.020	μg/L	F208071	EPA 200.8	U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: <u>2H13011</u>

Preparation: Closed Vessel Nitric Oven Digestion

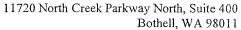
	Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
L	F208124-BLK1	Magnesium	0.6	2.0	μg/L	F208124	EPA 200.8	U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2H14010

Preparation: Closed Vessel Nitric Oven Digestion

	Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
L_	F208150-BLK1	Boron	-0.04	3.0	μg/L	F208150	EPA 200.8	U

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Notes and Definitions

U Analyte included in the analysis, but not detected

QM-13 The analytical spike recovery was outside control limits for the AS and/or ASD. The batch was accepted based on MS/MSD and

LCS/LCSD recoveries within control limits.

AS This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.

DET Analyte Detected

MDL Minimum Detection Limit

MRL Minimum Reporting Limit

ND Analyte Not Detected at or above the reporting limit

wet Sample results reported on a wet weight basis

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

RSD Relative Standard Deviation

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Liz Siska, Project Manager

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professional laboratory services

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

##					VO	C			S	VO	C		TCLP	ME	TALS			NC	ORC	AN	IIC:	S		Mic	CRO	От	HER			
Sample I.D.	Sampling Date/Time *If Composite, Indicate Both Start & Finish Date/Time	MATRIX (SEE BELOW)		524.2 524.2 BTEX 524.2 MTBE ONLY	8260B 624 VTICS 1, 4 Dioxane EDB DBCP	1	8015B GRO MEGRO MAVPH	8270D 625 SYTICS ABN A BN PAH	TPH8100 L1 L2	8015B DRO MEDRO MAEPH	PEST 608 PCB 608 PEST 8081A PCB 8082	OIL & GREASE 1664 TPH 1664	TCLP 1311 ABN METALS VOC PEST HERB	DISSOLVED METALS (LIST BELOW)		TS (1) (1) SPEC. CON.	ATT CI F SEC	800 C80D (T. ALK.)	TKN NH ₃ T. PHOS. O. PHOS.	1. Res. (COD PHENOLS TOC DOC	TOTAL CYANIDE TOTAL SULFIDE	REACTIVE CYANIDE REACTIVE SULFIDE FLASHPOINT GHITABILITY	TOTAL COLIFORM E. COLI FECAL COLIFORM .	ENTEROCOCO HETEROTROPHIC PLATE COUNT			# OF CONTAINERS	N OTE MEOH VIAI	
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ITY: <u>Manchester</u> HONE: 603-232-8717						Α		B		(С		IF YES:	FAX	OR P	DF													INFO, IF DIFFE	RENT)
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(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

ANALYTICAL DATA REPORTS

STREAM A



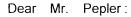
Paul Pepler GZA GeoEnvironmental, Inc. (NH) 380 Harvey Road Manchester, NH 03103



Eastern Analytical, Inc. ID: 112435

Client Identification: PSNH-MK

Date Received: 7/20/2012



Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted

"less than" followed by the reporting limit

> : "greater than" followed by the reporting limit

%R: % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

7/8//2, Date

of pages (excluding cover letter)

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Temperature upon receipt (°C): 6

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Date Date Sample % Dry

Lab ID Sample ID Received Sampled Matrix We

Received Sampled Matrix Weight Exceptions/Comments (other than thermal preservation)

112435.01 A Stream Softened 7/20/12 7/19/12 aqueous Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitibility, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater: Inorganics, 19th Edition, 1995; Microbiology, 20th Edition, 1998
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: 112435

Client: GZA GeoEnvironmental, Inc. (NH)

PSNH-MK Client Designation:

Sample ID:

A Stream Softened

Lab Sample ID:

112435.01

Matrix:

aqueous

Date Sampled:

7/19/12

Date Received:

7/20/12

Solids Suspended

< 5

Solids Dissolved BOD

22000 < 6 **Analysis**

Date Time Method Analyst Units

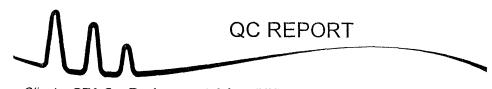
mg/L

7/23/12 10:40 7/23/12 10:40 2540D JCC 2540C JCC

mg/L mg/L

7/20/12 18:01

5210B SKC



Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

				Date of		
Parameter Name	Blank	LCS	LCSD	Units Analysis	Limits RPD	Method
Solids Suspended	< 5	100 (103 %R)	98 (98 %R) (5 RPD)	mg/L 7/23/12	90 - 110 20	2540D
Solids Dissolved	< 5	990 (99 %R)	, , , ,	mg/L 7/23/12	85 - 115	2540C
BOD	< 6	370 (92 %R)	380 (94 %R) (2 RPD)	mg/L 7/20/12	84 - 115 20	5210B

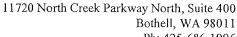
Samples were analyzed within holding times unless noted on the sample results page. Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.

Exceptions to the above statements are flagged or noted above or on the QC Narrative page.

^{*/!} Flagged analyte recoveries deviated from the QA/QC limits.





07 August 2012

Jeff Gagne
Eastern Analytical, Inc
25 Chenell Drive
Concord, NH 03301

RE: Merrimack Station 200.8

Ly Sisha

Enclosed are the analytical results for samples received by Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Project Manager



FRONTIER GLOBAL SCIENCES

Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096

ANALYTICAL REPORT FOR SAMPLES

Laboratory: Frontier Global Sciences, Inc.

SDG:

Client: Eastern Analytical, Inc

Project: Merrimack Station 200.8

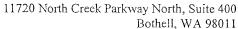
Sample ID	Lab ID	Matrix	Date Sampled	Date Received
112435.01 A Stream Softened	1207333-01	Water	19-Jul-12 00:00	24-Jul-12 09:20

Frontier Global Sciences, Inc.

The results in this report only apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Liz Siska, Project Manager

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CASE NARRATIVE

SAMPLE RECEIPT

Samples were received at Frontier Global Sciences (FGS) on July 24th, 2012. The samples were received intact, on-ice with temperatures measured at 0.3 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total metals in accordance with EPA Method 200.8 (modified).

Samples were prepared and analyzed for total mercury in accordance with EPA Method 1631E.

ANALYTICAL ISSUES

As an additional measure of the accuracy of the methods utilized for analysis and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

A reasonable measure of the precision of the analytical methods utilized for analysis is the relative percent difference (RPD) between matrix spike and matrix spike duplicate recoveries and between laboratory control sample and laboratory control sample duplicate recoveries. All of the relative percent differences were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

Frontier Global Sciences, Inc.

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CHAIN OF CUSTODY FORMS

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Liz Siska, Project Manager

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CHAIN OF CUSTODY FORMS

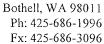
Client: Faskern Analytical Date & Time Received: Taulian Project: Received By: Carox Device # of Coolers Received: Samples Arrived By: Shipping	Logged By: <u>G</u> O	7buliz - Dwey HandOth	Labe	led By	led: 7] c: Gŵ		1
Tracking/Airbill Number(s): US 17 X46 S41 Thermal Preservation:None (Ambient)toose Ice) Th	ermal	Preservat	ion Required	9) N
	Comments	Thermometer ID:	T			103°C	e de la desar de la come
The coalers do not appear to be tampered with: Custody Seals are present and intact: Custody seals signed by: USA		Cooler XX3°C Cooler 2: °C Cooler 3: °C	Cooler 5 Cooler 5	' C	Cooler 8: Cooler 9:	*C Cooler 10 *C Cooler 11 *C Cooler 12	. '(
Chain of Custody: V/N Comments Sample ID/Description: Y Date/Time of collection: Y Sampled by: Y Preservation type: N/N Requested analyses: N/Dreward -> DN/Dreward -	Sample Condition/Integrity: Sample containers intact: Sample tabels are present an Sample ID on containers matel Correct sample containers of Samples received within hold Sample volume sufficient for Correct preservative used for pH of preservative used for pH of preservative such samples veri Method: Discussion/Resolution	hes COC: ed: ing times: requested analyses: requested analyses: field and recorded	Y/N	*		mmeats	
GS Sample Receipt Checklist Revision 2; 07/09/2012							

Frontier Global Sciences, Inc.

Liz Siska, Project Manager

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Ty Sisha





ANALYTICAL RESULTS

112435.01 A Stream Softened

Matrix: Water

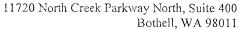
Laboratory ID: <u>1207333-01</u>

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Arsenic	ND	2.55	7.50	μg/L	50	F207286	2G29003	07/28/12	EPA 200.8 Mod	U
Cadmium	ND	0.042	0.200	$\mu g/L$	10	F207286	2G29003	07/29/12	EPA 200.8 Mod	U
Calcium	1320000	16200	200000	μg/L	5000	F207286	2G29003	07/28/12	EPA 200.8 Mod	
Chromium	ND	0.45	5.00	$\mu g/L$	50	F207298	2G31007	07/30/12	EPA 200.8 Mod	R-05, U
Copper	ND	0.50	5.00	μg/L	50	F207286	2G29003	07/28/12	EPA 200.8 Mod	U
Lead	ND	0.039	0.400	μg/L	10	F207286	2G29003	07/29/12	EPA 200.8 Mod	U
Magnesium	30200	8.7	125	μg/L	50	F207286	2G29003	07/28/12	EPA 200.8 Mod	
Mercury	44.3	0.84	5.05	ng/L	10	F208015	2H02011	08/02/12	EPA 1631E	FB-1631
Molybdenum	25.9	0.60	6.00	μg/L	50	F207311	2H05004	08/05/12	EPA 200.8 Mod	
Nickel	84.4	0.40	5.00	μg/L	50	F207286	2G29003	07/28/12	EPA 200.8 Mod	
Selenium	44.6	9.69	30.0	μg/L	50	F207286	2G29003	07/28/12	EPA 200.8 Mod	
Silver	ND	0.060	0.200	μg/L	10	F207286	2G29003	07/29/12	EPA 200.8 Mod	U
Sodium	5690000	5750	100000	μg/L	5000	F207298	2G31007	07/30/12	EPA 200.8 Mod	
Zinc	ND	0.82	10.0	$\mu g/L$	50	F207286	2G29003	07/28/12	EPA 200.8 Mod	U

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Lig Siska





MATRIX DUPLICATES/TRIPLICATES

SOURCE: 1207333-01

Batch: <u>F208015</u>

Sequence: 2H02011

Preparation: BrCl Oxidation

Lab Number: F208015-DUP1

Analyte	Sample Concentration ng/L	Duplicate Concentration ng/L	MRL	% RPD	RPD Limit	Method	Notes
Mercury	44.31	39.16	5.05	12.3	24	EPA 1631E	

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Liz Siska, Project Manager

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SOURCE: 1207333-01

Batch: <u>F207286</u>

Sequence: 2G29003

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207286-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Magnesium	30230	252.50	29900	-129	70 - 130 E	PA 200.8 Mod	QM-02
Nickel	84.45	4.0400	86.33	46.7	70 - 130 E	PA 200.8 Mod	QM-02
Copper	0.72	4.0400	4.28	88.0	70 - 130 E	PA 200.8 Mod	
Zinc	6.11	10.100	22.96	167	70 - 130 E	PA 200.8 Mod	QM-07
Arsenic	4.54	15.150	18.44	91.7	70 - 130 E	PA 200.8 Mod	
Selenium	44.57	30.300	66.30	71.7	70 - 130 E	PA 200.8 Mod	
Silver	ND	1.5150	1.375	90.7	70 - 130 E	PA 200.8 Mod	
Cadmium	0.913	0.80800	1.465	68.4	70 - 130 E	PA 200.8 Mod	QM-07
Lead	ND	1.5150	1.335	88.1	70 - 130 E	PA 200.8 Mod	•

Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	252.50	29980	-100	0.245	70 - 130	20	EPA 200.8 Mod	QM-02
Nickel	4.0400	88.04	88.8	1.95	70 - 130	20	EPA 200.8 Mod	
Copper	4.0400	4.12	84.1	3.76	70 - 130	20	EPA 200.8 Mod	
Zinc	10.100	17.47	112	27.2	70 - 130	20	EPA 200.8 Mod	QR-08
Arsenic	15.150	20.42	105	10.2	70 - 130	20	EPA 200.8 Mod	Ì
Selenium	30.300	70.73	86.3	6.47	70 - 130	20	EPA 200.8 Mod	
Silver	1.5150	1.320	87.1	4.09	70 - 130	20	EPA 200.8 Mod	
Cadmium	0.80800	1.430	64.1	2.41	70 - 130	20	EPA 200.8 Mod	QM-07
Lead	1.5150	1.407	92.9	5.27	70 - 130	20	EPA 200.8 Mod	

Frontier Global Sciences, Inc.

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Ly Justin





SOURCE: 1207333-01RE1

Batch: <u>F207286</u>

Sequence: 2G29003

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207286-MS/MSD2

Analyte	Sample Concentrat (μg/L)	•	Concer	AS ntration g/L)	MS % Recovery	Recovery Limits	Method	Notes
Calcium	1318000	750.00	130	2000	-2080	70 - 130	EPA 200.8 Mod	QM-02
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Calcium	750.00	1327000	1270	1.91	70 - 130	20	EPA 200.8 Mod	QM-02

Frontier Global Sciences, Inc.

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Liz Siska





SOURCE: 1207333-01

Batch: <u>F207286</u>

Sequence: <u>2G29003</u>

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207286-MS/MSD3

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Magnesium	30230	101000	123100	92.0	70 - 130 EPA	A 200.8 Mod	AS
Nickel	84.45	1262.5	1204	88.7	70 - 130 EPA	A 200.8 Mod	AS
Copper	0.72	1262.5	1111	87.9	70 - 130 EPA	A 200.8 Mod	AS
Zinc	6.11	2525.0	2242	88.5	70 - 130 EPA	4 200.8 Mod	AS
Arsenic	4.54	1010.0	981.6	96.7	70 - 130 EPA	A 200.8 Mod	AS
Selenium	44.57	1010.0	955.6	90.2	70 - 130 EPA	A 200.8 Mod	AS
Silver	ND	50.500	42.58	84.3	70 - 130 EP	A 200.8 Mod	AS
Cadmium	0.913	101.00	89.22	87.4	70 - 130 EPA	A 200.8 Mod	AS
Lead	ND	252.50	225.8	89.4	70 - 130 EPA	A 200.8 Mod	AS

Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	101000	122800	91.7	0.264	70 - 130	20	EPA 200.8 Mod	AS
Nickel	1262.5	1212	89.3	0.694	70 - 130	20	EPA 200.8 Mod	AS
Copper	1262.5	1109	87.8	0.188	70 - 130	20	EPA 200.8 Mod	AS
Zinc	2525.0	2269	89.6	1.22	70 - 130	20	EPA 200.8 Mod	AS
Arsenic	1010.0	987.2	97.3	0.560	70 - 130	20	EPA 200.8 Mod	AS
Selenium	1010.0	966.4	91.3	1.13	70 - 130	20	EPA 200.8 Mod	AS
Silver	50.500	43.83	86.8	2.89	70 - 130	20	EPA 200.8 Mod	AS
Cadmium	101.00	90.27	88.5	1.17	70 - 130	20	EPA 200.8 Mod	AS
Lead	252.50	228.6	90.5	1.20	70 - 130	20	EPA 200.8 Mod	AS

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Lig Siska



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207333-01RE1

Batch: <u>F207286</u>

Sequence: 2G29003

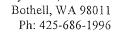
Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207286-MS/MSD4

Analyte	Sample Concentrat (µg/L)	*	Conce	MS ntration g/L)	MS % Recovery	Recovery Limits	, Method	Notes
Calcium	1318000	1010000	0 112	30000	98.1	70 - 130	EPA 200.8 Mod	AS
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Calcium	10100000	11140000	97.2	0.807	70 - 130	20	EPA 200.8 Mod	AS

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Fx: 425-686-3096



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207333-01RE4

Batch: F207298

Chromium

Sequence: 2G31007

Preparation: Closed Vessel Nitric Oven Digestion

7.0700

11.47

Lab Number: F207298-MS/MSD1

85 - 115

20

EPA 200.8 Mod

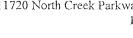
Analyte	Sample Concentra (µg/L)		MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Chromium	3.56	7.0700	10.91	104	85 - 115 I	EPA 200.8 Mod	
Analyte	Spike Added (μg/L)	MSD Concentration (µg/L)	MSD % Recovery RPD	Recovery Limits	RPD Limit	Method	Notes

112

4.97

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207333-01RE3

Batch: F207298

Sequence: 2G31007

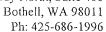
Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207298-MS/MSD2

Analyte	Sample Concentrati (µg/L)	Spike on Added (µg/L)		tration	MS % Recovery	Recovery Limits	Method	Notes
Sodium	5690000	505.00	5644	1000	-9220	75 - 125	EPA 200.8 Mod	QM-02
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	505.00	5955000	52500	5.37	75 - 125	20	EPA 200.8 Mod	QM-02

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207333-01RE4

Batch: <u>F207298</u>

Sequence: <u>2G31007</u>

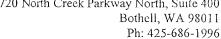
Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207298-MS/MSD3

Analyte	Sample Concentrati (µg/L)	Spike on Added (µg/L)	Conce	MS ntration g/L)	MS % Recovery	Recovery Limits	, Method	Notes
Chromium	3.56	1010.0	1	090	108	85 - 115	EPA 200.8 Mod	AS
Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Chromium	1010.0	1094	108	0.417	85 - 115	20	EPA 200.8 Mod	AS

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Fx: 425-686-3096



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207333-01RE3

Batch: F207298

Sequence: 2G31007

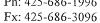
Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207298-MS/MSD4

Analyte	Sample Concentra (µg/L)	tion Added	Conce	MS ntration g/L)	MS % Recovery	Recovery Limits	, Method	Notes
Sodium	5690000	0 1010000	0 165	10000	107	75 - 125	EPA 200.8 Mod	AS
Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	10100000	16410000	106	0.555	75 - 125	20	EPA 200.8 Mod	AS

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SOURCE: 1207333-01RE5

Batch: <u>F207311</u>

Sequence: 2H05004

Preparation: Closed Vessel Nitric Oven Digestion

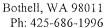
Lab Number: F207311-MS/MSD1

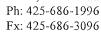
Analyte	Sample Concentrat (µg/L)		MS Concentrat (μg/L)		MS % Recovery	Recovery Limits	, Method	Notes
Molybdenum	25.92	2.0200	27.26		66.4	70 - 130	EPA 200.8 Mod	QM-02
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	70	% PD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	2.0200	27.67	86.6 1.	49	70 - 130	20	EPA 200.8 Mod	

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Lig Sisha







SOURCE: 1207333-01RE5

Batch: <u>F207311</u>

Sequence: 2H05004

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207311-MS/MSD2

Analyte	Sample Concentrat (µg/L)	•	Conce	AS ntration g/L)	MS % Recovery	Recovery Limits	Method	Notes
Molybdenum	25.92	505.00	52	26.8	99.2	70 - 130	EPA 200.8 Mod	AS
Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	505.00	531.4	100	0.878	70 - 130	20	EPA 200.8 Mod	AS

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EPA 1631E

Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207333-01

Batch: F208015

Sequence: 2H02011

Preparation: BrCl Oxidation

Mercury

102.00

139.5

Lab Number: F208015-MS/MSD1

71 - 125

Analyte	Sample Concentrati (ng/L)	Spike ion Added (ng/L)	MS Concent (ng/l	ration	MS % Recovery	Recovery Limits	Method	Notes
Mercury	44.31	102.00	142	.3	96.0	71 - 125	EPA 1631E	
Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes

93.3

1.94

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Ly Sisha



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207391-02

Batch: <u>F208015</u>

Sequence: 2H02011

Preparation: BrCl Oxidation

Lab Number: F208015-MS/MSD2

Analyte	Sample Concentrat (ng/L)	•	MS Concent (ng/)	ration	MS % Recovery	Recovery Limits	Method	Notes
Mercury	86.10	204.00	274	.6	92.4	71 - 125	EPA 1631E	
Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	204.00	286.3	98.1	4.16	71 - 125	24	EPA 1631E	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F207286

Sequence: 2G29003

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207286-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Magnesium	250.00	222.3	88.9	85 - 115	EPA 200.8 Mod	
Calcium	1500.0	1437	95.8	85 - 115	EPA 200.8 Mod	
Nickel	4.0000	3.56	89.1	85 - 115	EPA 200.8 Mod	
Copper	4.0000	3.72	93.0	85 - 115	EPA 200.8 Mod	
Zinc	10.000	9.39	93.9	85 - 115	EPA 200.8 Mod	
Arsenic	15.000	13.70	91.3	85 - 115	EPA 200.8 Mod	
Selenium	30.000	29.62	98.7	85 - 115	EPA 200.8 Mod	
Silver	1.5000	1.388	92.5	85 - 115	EPA 200.8 Mod	
Cadmium	0.80000	0.738	92.3	85 - 115	EPA 200.8 Mod	
Lead	1.5000	1.437	95.8	85 - 115	EPA 200.8 Mod	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	250.00	224.9	90.0	1.18	85 - 115	20	EPA 200.8 Mod	
Calcium	1500.0	1438	95.8	0.0771	85 - 115	20	EPA 200.8 Mod	
Nickel	4.0000	3.68	92.1	3.34	85 - 115	20	EPA 200.8 Mod	
Copper	4.0000	3.78	94.6	1.65	85 - 115	20	EPA 200.8 Mod	
Zinc	10.000	9.45	94.5	0.688	85 - 115	20	EPA 200.8 Mod	
Arsenic	15.000	14.15	94.3	3.23	85 - 115	20	EPA 200.8 Mod	
Selenium	30.000	28.91	96.4	2.43	85 - 115	20	EPA 200.8 Mod	
Silver	1.5000	1.404	93.6	1.14	85 - 115	20	EPA 200.8 Mod	
Cadmium	0.80000	0.729	91.1	1.30	85 - 115	20	EPA 200.8 Mod	
Lead	1.5000	1.450	96.7	0.898	85 - 115	20	EPA 200.8 Mod	

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Bothell, WA 98011 Ph: 425-686-1996





LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F207298</u>

Sequence: <u>2G31007</u>

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207298-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (μg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Sodium	500.00	474	94.8	80 - 120	EPA 200.8 Mod	
Chromium	7.0000	6.85	97.8	85 - 115	EPA 200.8 Mod	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Ņotes
Sodium	500.00	461	92.3	2.71	80 - 120	20	EPA 200.8 Mod	
Chromium	7.0000	7.19	103	4.84	85 - 115	20	EPA 200.8 Mod	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F207311

Sequence: 2H05004

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F207311-BS/BSD1

LCS Source: Blank Spike

Analyte		Spike Added (µg/L)	LC Concent (µg/	ration	LCS % Recovery	Recovery Limits	Method	Notes
Molybdenum		2.0000	1.8	6	93.2	85 - 115	EPA 200.8 Mod	
Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	2.0000	1.86	92.8	0.408	85 - 115	20	EPA 200.8 Mod	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F208015

Sequence: 2H02011

Preparation: BrCl Oxidation

Lab Number: F208015-BS/BSD1

LCS Source: LCS

Analyte	Spike Added (ng/L)	LCS Concentration (ng/L)	LCS % Recovery	Recovery Limits	Method	Notes
Mercury	15.679	15.08	96.2	80 - 120	EPA 1631E	

Analyte	Spike Added (ng/L)	LCSD Concentration (ng/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Analyte	(lig/L)	(IIg/L/)	recovery		231111111			11000
Mercury	15.679	14.83	94.6	1.62	80 - 120	24	EPA 1631E	

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2G29003

Preparation: Closed Vessel Nitric Oven Digestion

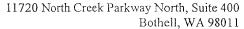
Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F207286-BLK1	Magnesium	1.3	2.5	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Calcium	3	40	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Nickel	0.01	0.10	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Copper	0.02	0.10	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Zinc	0.17	0.20	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Arsenic	-0.04	0.15	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Selenium	0.21	0.60	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Silver	0.0009	0.020	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Cadmium	0.009	0.020	μg/L	F207286	EPA 200.8 Moc	U
F207286-BLK1	Lead	0.005	0.040	μg/L	F207286	EPA 200.8 Moc	U

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Liz Siska, Project Manager

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Ph: 425-686-1996

Fx: 425-686-3096

PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2G31007

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample	ID Ar	nalyte	Foun	d MRL	Units	Batch	Method	Notes
F207298-BL	K1 So	dium	0.3	20	μg/L	F207298	ΞPA 200.8 Moc	U
F207298-BL	.K1 Ch	romium	-0.00	1 0.10	μg/L	F207298	EPA 200.8 Mod	U

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PREPARATION BLANKS

Instrument: Hg2600-2

Sequence: 2H02011

Preparation: BrCl Oxidation

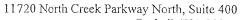
Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F208015-BLK1	Mercury	0.03	0.50	ng/L	F208015	EPA 1631E	U
F208015-BLK2	Mercury	0.02	0.50	ng/L	F208015	EPA 1631E	U
F208015-BLK3	Mercury	0.03	0.50	ng/L	F208015	EPA 1631E	U
F208015-BLK4	Mercury	0.07	0.50	ng/L	F208015	EPA 1631E	U, QB-04

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Liz Siska, Project Manager

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Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096

PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2H05004

Preparation: Closed Vessel Nitric Oven Digestion

	Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
	F207311-BLK1	Molybdenum	0.05	0.12	μg/L	F207311	EPA 200.8 Moc	U

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Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096



Notes and Definitions

U	Analyte included in the analysis, but not detected
R-05	The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits.
QR-08	The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QM-02	The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 1 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
FB-1631	Required equipment/field/filter blank not submitted by the client. The sample has been analyzed according to 1631E, but does not meet 1631E criteria
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
DET	Analyte Detected
MDL	Minimum Detection Limit
MRL	Minimum Reporting Limit
ND	Analyte Not Detected at or above the reporting limit
wet	Sample results reported on a wet weight basis
dry	Sample results reported on a dry weight basis

Frontier Global Sciences, Inc.

RPD

RSD

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Relative Percent Difference

Relative Standard Deviation

112435

CHAIN-OF-CUSTODY RECORD

De Province Busine Cinera Brown Assessment

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Sample 1.D.	Sampling Date/Time *If Composite, Indicate Both Start & Finish Date/Time	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	524.2 524.7 BTEK 534.7 HTRE DALY	8250B 624 YTICS	8021B BTEX HALOS	80153 GRO MEGRO MAYPH	8270C 625 SVTICS ABN A BN PAH	TPH8100 LI L2	80153 DRO MEDRO MAEPH	PEST 608 PCB 608 PEST 8081A PCB 8082	OII & GEENSE 1664 TPH 1664	JCLP 1311 ABN HETAUS VOC PEST HEEB	DISSOLYED HEIRIS (LIST BELOW)	FOTAL METALS (LIST BELOW)	15 (15) (18) SPEL, CON.	Br Cl F SQ. NO, NO, NO,/NO,	800 CB00 1. Aux	TKN HH; I. PHOS.	pH T. Res. Cilloring	COD PHENGES TOC	TOTAL CYRNIDE TOTAL SULIDE	Keachye (Yanide Reactive Subboe Flashpoine Bohitableiy	I. Colhorn E. Coli F. Colhorn	ENTERSCOUL PLATE COUNT		. 12.21 Performance on the Department of the Constitution of the Section Constitution of the Constitution	+	ME(Notes)H Vial #
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4-Stream Softmed												:																		
																	:			A-4-1-W-4-V-								-		
ATRIX: A-AIR; S-SOIL: GW-GROUND WATER WW-WASTE WATER RESERVATIVE: H-HCL; N-HNO ₁ ; S-H ₂ SO ₁ ; N Paul Peple	a-NaOK; M-MEOK	KING W	VATER;			 									-	-		-					Mes		0	DCSA	13 P		Er Mi	Po C
Paul Pepler ROJECT MANAGER: DMPANY: GZA GeoEnvironmental, Inc 380 Harvey Road TY: Manchester STATE: NH ZIP: 03103					QA RE	/QC PORT	ING I	LEVEI B DR MCF	L (С		REPO PRELIHS IF YES: ELECT	FAX RON	OR PI	No DF)	ŅS	. 1	MP				OTHEI Disso Notes	R MET OLVED ! S: (IE:	ALS: Es METALS SPECIAL	FIELD I	, Næ. cd. ILTEREDI	or (1),	Yes	PB, CI Ag, Zr, Pb No If Different	
603-624-9463 AIL: paul.pepler@gza.com NAME: Wastewater Analysis 750H - MIC						İ	ESUM	PTIV	E CE	RTAII	NTY	1	NO FAX	_				Equi					Pro	Subcontract Metals to FGS Provide project specific MS/MSD for metals PH-7. (0) LUSTOMER REQUESTED Addr Hons ITE HISTORY: Car a May USPECTED CONTAMINATION:						
TE: NH MA ME VT OTHER: SULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:					RE	LIND	UISHI LUG UISHI	ED BY	MÀ YI MŒ Y:		DATE: 2 Date:	1/2 /20,	91 112 1	Z IME: _ Y IME:	12:	REC 5-71 REC	EIVED EIVED	BY: BY:		pur act	eai Oc	SITE I	s+o Histor	100 r	Ro C	C/YE	ste Mo	4 S. —(olchi he	
UOTE #:	P0 #:							UISHI				DATE:			IME:			EIYED			,					INATION		···	***************************************	



Paul Pepler GZA GeoEnvironmental, Inc. (NH) 380 Harvey Road Manchester, NH 03103



Eastern Analytical, Inc. ID: 112640

Client Identification: PSNH-MK

Date Received: 7/27/2012



Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted

< : "less than" followed by the reporting limit

> : "greater than" followed by the reporting limit

%R: % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

B. 15.2

Date

of pages (excluding cover letter)



Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Temperature upon receipt (°C): 18

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Date Date Sample % Dry Received Sampled Matrix Weight Exceptions/Comments (other than thermal preservation) Lab ID Sample ID 112640.01 Softened Stream A Wastewater 7/27/12 7/27/12 aqueous Adheres to Sample Acceptance Policy 112640.02 Field Blank 7/27/12 7/27/12 aqueous Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitibility, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater: Inorganics, 19th Edition, 1995; Microbiology, 20th Edition, 1998
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 2nd edition, 1992

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Sample ID:

Softened Stream A Wastewater

Lab Sample ID:	112640.01
Matrix:	aqueous
	7/27/12
Date Sampled: Date Received:	7/27/12
Units:	ug/l
Date of Analysis:	7/30/12
Analyst:	BML
Method:	624
Dilution Factor:	1
Chloromethane	< 5
Vinyl chloride	< 2
Bromomethane	< 2
Chloroethane	< 5
Trichlorofluoromethane	< 5
Acrolein	< 50
Acetone	< 50
1,1-Dichloroethene	< 1
Methylene chloride	< 5
Acrylonitrile	< 50
Methyl-t-butyl ether(MTBE)	< 10
trans-1,2-Dichloroethene	< 2
Vinyl acetate	< 10
1,1-Dichloroethane	< 2
cis-1,2-Dichloroethene	< 2
2-Butanone(MEK)	< 10
Chloroform	< 2
1,1,1-Trichloroethane	< 2
Carbon tetrachloride	< 2
Benzene	< 1
1,2-Dichloroethane	< 2
Trichloroethene	< 2
1,2-Dichloropropane	< 2
Bromodichloromethane	< 2
2-Chloroethylvinylether	< 2 < 10
4-Methyl-2-pentanone(MIBK) cis-1,3-Dichloropropene	< 2
Toluene	< 1
trans-1,3-Dichloropropene	< 2
1,1,2-Trichloroethane	< 2
2-Hexanone	< 10
Tetrachloroethene	< 2
Dibromochloromethane	< 2
Chlorobenzene	< 2
Ethylbenzene	< 1
mp-Xylene	< 1
o-Xylene	< 1
Styrene	< 1
Bromoform	< 2
1,1,2,2-Tetrachloroethane	< 2
1,3-Dichlorobenzene	< 1
1,4-Dichlorobenzene	< 1
1,2-Dichlorobenzene	< 1
4-Bromofluorobenzene (surr)	92 %R
1,2-Dichlorobenzene-d4 (surr)	104 %R
Toluene-d8 (surr)	99 %R

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Chloromethane	< 5	12 (62 %R)	13 (63 %R) (2 RPD)	7/30/2012	ug/l	0 - 273	20	624
Vinyl chloride	< 2	18 (88 %R)	18 (90 %R) (2 RPD)	7/30/2012	ug/l	0 - 251	20	624
Bromomethane	< 2	17 (83 %R)	17 (83 %R) (0 RPD)	7/30/2012	ug/l	0 - 242		624
Chloroethane	< 5	17 (84 %R)	18 (90 %R) (7 RPD)	7/30/2012	-	14 - 230		624
Trichlorofluoromethane	< 5	21 (104 %R)	20 (102 %R) (2 RPD)	7/30/2012	_	17 - 181	20	624
Acrolein	< 50	< 50 (77 %R)	< 50 (77 %R) (0 RPD)		_	40 - 160	20	624
Acetone	< 50	< 50 (60 %R)	< 50 (66 %R) (10 RPD)	7/30/2012	-	40 - 160	20	624
1,1-Dichloroethene	< 1	16 (78 %R)	16 (78 %R) (0 RPD)	7/30/2012	ug/l			624
Methylene chloride	< 5	14 (70 %R)	15 (75 %R) (7 RPD)	7/30/2012	ug/l	0 - 221	20	624
Acrylonitrile	< 50	< 50 (66 %R)	< 50 (69 %R) (4 RPD)		_	40 - 160	20	624
Methyl-t-butyl ether(MTBE)	< 10	20 (83 %R)	20 (85 %R) (2 RPD)		_	70 - 130		624
trans-1,2-Dichloroethene	< 2	15 (77 %R)	15 (77 %R) (0 RPD)		-	54 - 156	20	624
Vinyl acetate	< 10	30 (126 %R)	30 (131 %R) (4 RPD)		-	40 - 160		624
1,1-Dichloroethane	< 2	18 (89 %R)	18 (92 %R) (3 RPD)		_	59 - 155		624
cis-1,2-Dichloroethene	< 2	18 (89 %R)	18 (89 %R) (0 RPD)		-	70 - 130		624
2-Butanone(MEK)	< 10	20 (83 %R)	20 (86 %R) (4 RPD)		•	40 - 160		624
Chloroform	< 2	19 (94 %R)	19 (95 %R) (1 RPD)		_	51 - 138	20	624
1,1,1-Trichloroethane	< 2	20 (98 %R)	20 (98 %R) (0 RPD)		_	52 - 162		624
Carbon tetrachloride	< 2	18 (89 %R)	18 (89 %R) (0 RPD)		_	70 - 140		624
Benzene	< 1	17 (87 %R)	18 (90 %R) (3 RPD)		_	37 - 151	20	624
1,2-Dichloroethane	< 2	17 (87 %R)	18 (92 %R) (6 RPD)		_	49 - 155		624
Trichloroethene	< 2	18 (89 %R)	18 (92 %R) (3 RPD)		_	71 - 157		624
1,2-Dichloropropane	< 2	18 (89 %R)	18 (92 %R) (3 RPD)		ug/l			
Bromodichloromethane	< 2	20 (99 %R)	20 (100 %R) (1 RPD)		_	35 - 155		624
2-Chloroethylvinylether	< 2	18 (92 %R)	19 (95 %R) (3 RPD)		_			624
4-Methyl-2-pentanone(MIBK)	< 10	20 (95 %R)	20 (99 %R) (4 RPD)		ug/l			624
cis-1,3-Dichloropropene	< 2	19 (96 %R)	20 (98 %R) (2 RPD)		_	40 - 160		624
Toluene	< 1	19 (93 %R)	19 (94 %R) (1 RPD)		ug/l		20	624
trans-1,3-Dichloropropene	< 2	17 (85 %R)	17 (87 %R) (1 RPD)			47 - 150		624
1,1,2-Trichloroethane	< 2	17 (65 %R) 19 (94 %R)	20 (98 %R) (4 RPD)		_	17 - 183	20	624
2-Hexanone	< 10	20 (95 %R)			·	52 - 150		624
Tetrachloroethene	< 2	20 (93 %R) 20 (100 %R)	20 (99 %R) (4 RPD)		_	40 - 160		624
Dibromochloromethane	< 2	19 (93 %R)	20 (102 %R) (2 RPD) 19 (95 %R) (2 RPD)	7/30/2012	_	64 - 148		624
Chlorobenzene	< 2	19 (93 %R) 19 (94 %R)			_	53 - 149		624
Ethylbenzene	< 1	20 (99 %R)	19 (95 %R) (1 RPD)		_	37 - 160		624
mp-Xylene	< 1		20 (99 %R) (0 RPD)		_	37 - 162		624
o-Xylene		39 (96 %R) 19 (95 %R)	39 (97 %R) (1 RPD)		_	70 - 130		624
•	< 1	• •	19 (96 %R) (1 RPD)		_	70 - 130		624
Styrene	< 1	19 (97 %R)	20 (98 %R) (1 RPD)		_	70 - 130		624
Bromoform	< 2	19 (96 %R)	19 (97 %R) (1 RPD)		_	45 - 169		624
1,1,2,2-Tetrachloroethane	< 2	19 (93 %R)	19 (95 %R) (2 RPD)		_	46 - 157		624
1,3-Dichlorobenzene	< 1	19 (95 %R)	19 (95 %R) (0 RPD)		_	59 - 156		624
1,4-Dichlorobenzene	< 1	19 (95 %R)	19 (97 %R) (2 RPD)		_	18 - 190		624
1,2-Dichlorobenzene	< 1	19 (94 %R)	19 (95 %R) (1 RPD)		_	18 - 190		624
4-Bromofluorobenzene (surr)	90 %R	97 %R	97 %R					624
1,2-Dichlorobenzene-d4 (surr)	101 %R	100 %R	98 %R					624
Toluene-d8 (surr)	98 %R	101 %R	100 %R					624 3
Eastern Analytic	al, Inc.	www.eaila	bs.com 800.287.0525	customerser	vice@e	ailabs.co	m	3

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: **PSNH-MK**

Parameter Name

Blank

LCS

LCSD

Analysis Date Units Limits RPD Method

Samples were extracted and analyzed within holding time limits.

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

Sample surrogate recoveries met the above stated criteria.

The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.

There were no exceptions in the analyses, unless noted.

*/! Flagged analyte recoveries deviated from the QA/QC limits. Any impact to data is addressed below.

LABORATORY REPORT

EAI ID#: 112640

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Sample ID:

Softened Stream

A Wastewater

112640.01 Lab Sample ID: Matrix: aqueous Date Sampled: 7/27/12 Date Received: 7/27/12 Units: mg/L Date of Extraction/Prep: 8/2/12 Date of Analysis: 8/2/12 LAS Analyst: Method: 1664A Dilution Factor: 1

Oil & Grease (HEM)

< 5



Batch ID: 634795-03018/A080212OG1661

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Oil & Grease (HEM)	< 5	39 (98 %R)	36 (91 %R) (7 RPD)) 8/2/2012	mg/L	78 - 114	18	1664A

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

Sample surrogate recoveries met the above stated criteria.

The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.

There were no exceptions in the analyses, unless noted.

Samples were extracted and analyzed within holding time limits.

*/! Flagged analyte recoveries deviated from the QA/QC limits.

LABORATORY REPORT

EAI ID#: 112640

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Sample ID:

Softened Stream A

Wastewater

Lab Sample ID:

112640.01

Matrix:

aqueous

Date Sampled:

7/27/12

Date Received:

7/27/12

Units

Analysis

Date Time Method Analyst

Chloride Cyanide Total 12000 < 0.01 mg/L mg/L 8/01/12 10:27 4500CIE

8/01/12 15:00 4500CNE KJR

KD



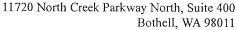
EAI ID#: 112640

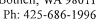
Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: PSNH-MK

Parameter Name	Blank	LCS	LCSD	Date of Units Analysis	Limits RPD	Method
Chloride	< 1	24 (97 %R)	25 (100 %R) (3 RPD)	mg/L 8/1/12	90 - 110 20	4500CIE
Cyanide Total	< 0.01	0.24 (96 %R)	NA	mg/L 8/1/12	85 - 115 20	4500CNE

Samples were analyzed within holding times unless noted on the sample results page. Instrumentation was calibrated in accordance with the method requirements. The method blanks were free of contamination at the reporting limits. The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria. Exceptions to the above statements are flagged or noted above or on the QC Narrative page. */! Flagged analyte recoveries deviated from the QA/QC limits.





Fx: 425-686-3096

14 August 2012

Jeff Gagne Eastern Analytical, Inc 25 Chenell Drive Concord, NH 03301

RE: Merrimack Station 200.8

Enclosed are the analytical results for samples received by Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kate Haney

Client Services Manager

Taw Muy



ANALYTICAL REPORT FOR SAMPLES

Laboratory: Frontier Global Sciences, Inc.

SDG:

Client: Eastern Analytical, Inc

Project: Merrimack Station 200.8

Sample ID	Lab ID	Matrix	Date Sampled	Date Received
112640.01 Softened Stream A	1207436-01	Water	27-Jul-12 14:20	31-Jul-12 11:35
112640.02 Field Blank	1207436-02	Water	27-Jul-12 14:15	31-Jul-12 11:35

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CASE NARRATIVE

SAMPLE RECEIPT

Two (2) water samples were received July 31st, 2012 at Frontier Global Sciences (FGS). The samples were received intact, on-ice within a cooler at 6.3 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Sample preparation and analysis for trace metals was performed in accordance with EPA Method 200.8.

Sample preparation and analysis for total mercury was performed in accordance with EPA Method 1631E.

ANALYTICAL ISSUES

Liquid spikes were prepared for every preparation as a measure of accuracy. All liquid spikes and certified reference material (if applicable) were within the control limits.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries were within the control limits.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences were within the control limits.

Frontier Global Sciences, Inc.

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Page 2 of 20 1207436 Final Report 08/14/2012

ae Muy

Ph: 425-686-1996 Fx: 425-686-3096



CHAIN OF CUSTODY FORMS

.e	FRONT	ENCES		nain of Custody Record & Lab Air, Water, Sediments, Plan Hydrocarbon & Ot Page of act: Sect Gagno					ninA b	nal Tis		i	74320	11720 North Creek Parkway N Bothell, WA 98011 Phone: 425-686-1996 Fax: 425-686-3096 info@FrontierGS.com http://www.FrontierGS.com
Add	t: Enstern And ress: 55 Chemic	LE DEVE	Phone:	1003-7	CAA	<u>no_</u> ~<> 5						Analyses Re	equested	FGS PM: Li そういちょう Date:
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No.	Bottle ID	Sample ID		Bottles	Matrix	Date 8	k Time	Sampled By	Field	Field Preserved: HNO, HCI BrCI	J. 2.	Mother (P.Ms. L		Comments
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2	112640.02	Field Blan	k_			7/2.7/12	2 14:15]	X			- Ca, Mg, Na Hg(cold vapor)
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# of	Coolers:						Tracking	g numb	er:					
OR	ple Disposat: eturn (shipping fee tandard Disposal—	s may apply) 30 Days after repo	rt					you at	thorize	FGS to	perf	orm the spe	cified analys	
OR	etain for wee	ks after report (sto	rage fe	es may apç	ly)			Custor	ner App	proval:	4.0	Jul-Ma	ullow	Date: 7/30/12

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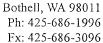
CHAIN OF CUSTODY FORMS

FGS Work Order:	1207	izle.		Sample	Re	ceipt Ch	ieck	list				Fronti	er G	lobal Scie	nces
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ANALYTICAL RESULTS

112640.01 Softened Stream A

Matrix: Water

Laboratory ID: <u>1207436-01</u>

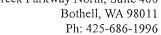
Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	No
Calcium	2460000	535	7960	μg/L	200	F208014	2H05006	08/03/12	EPA 200.8	
Magnesium	701000	147	995	μg/L	500	F208124	2H13011	08/13/12	EPA 200.8	
Mercury	29.9	0.84	5.05	ng/L	10	F208032	2H06002	08/03/12	EPA 1631E	
Sodium	4810000	496	9950	μg/L	500	F208014	2H10005	08/09/12	EPA 200.8	

Frontier Global Sciences, Inc.

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ANALYTICAL RESULTS

112640.02 Field Blank

Matrix: Water

Laboratory ID: <u>1207436-02</u>

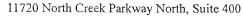
Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Calcium	ND	3	40	μg/L	1	F208014	2H05006	08/03/12	EPA 200.8	U
Magnesium	ND	0.3	2.0	μg/L	1	F208124	2H13011	08/13/12	EPA 200.8	U
Mercury	ND	0.08	0.50	ng/L	1	F208032	2H06002	08/03/12	EPA 1631E	U
Sodium	ND	1	20	μg/L	1	F208014	2H10005	08/09/12	EPA 200.8	U

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FRONTIER GLOBAL SCIENCES

Bothell, WA 98011 Ph: 425-686-1996 Fx: 425-686-3096

MATRIX DUPLICATES/TRIPLICATES

SOURCE: 1207282-01

Batch: <u>F208032</u>

Sequence: 2H06002

Preparation: BrCl Oxidation

Lab Number: F208032-DUP1

Analyte	Sample Concentration ng/L	Duplicate Concentration ng/L	MRL	% RPD	RPD Limit	Method	Notes
Mercury	47.32	51.78	5.05	8.99	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207373-02

Batch: <u>F208014</u>

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208014-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	1687	505.00	2221	106	70 - 130	EPA 200.8	
Calcium	3021	1515.0	4521	99.0	70 - 130	EPA 200.8	

Analyte	Spike Added (μg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	505.00	2227	107	0.241	70 - 130	20	EPA 200.8	
Calcium	1515.0	4525	99.3	0.0821	70 - 130	20	EPA 200.8	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207373-02

Batch: <u>F208014</u>

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208014-MS/MSD2

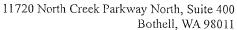
Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (μg/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	1687	20200	22380	102	70 - 130	EPA 200.8	AS
Calcium	3021	20200	24250	105	70 - 130	EPA 200.8	AS

Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	20200	22750	104	1.63	70 - 130	20	EPA 200.8	AS
Calcium	20200	23980	104	1.13	70 - 130	20	EPA 200.8	AS

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Ph: 425-686-1996 Fx: 425-686-3096



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207373-01

Batch: <u>F208032</u>

Sequence: 2H06002

Preparation: BrCl Oxidation

Lab Number: F208032-MS/MSD1

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	1.54	5.1000	6.60	99.3	71 - 125	EPA 1631E	
	Spike	MSD	MSD 9/	Danasa	. ppp		

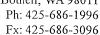
Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	5.1000	6.34	94.2	4.03	71 - 125	24	EPA 1631E	

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Tale Muey





MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207436-01

Batch: <u>F208032</u>

Sequence: 2H06002

Preparation: BrCl Oxidation

Lab Number: F208032-MS/MSD2

Analyte	Sample Concentrat (ng/L)		M Concen (ng	tration	MS % Recovery	Recovery Limits	Method	Notes
Mercury	29.89	81.600	10:	3.3	89.9	71 - 125	EPA 1631E	
Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	81.600	107.4	95.1	3.96	71 - 125	24	EPA 1631E	

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Jaw Mary

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207373-02RE2

Batch: F208124

Sequence: 2H13011

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208124-MS/MSD1

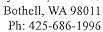
Analyte	Sample Concentrati (µg/L)	Spike ion Added (µg/L)	MS Concentratio (μg/L)	MS on % Recovery	Recovery Limits	Method	Notes
Magnesium	785.0	252.50	1045	103	70 - 130	EPA 200.8	
Analyte	Spike Added (μg/L)	MSD Concentration (μg/L)	MSD % % Recovery RP	J	RPD Limit	Method	Notes
Magnesium	252.50	1063	110 1.7	70 - 130	20	EPA 200.8	

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Fx: 425-686-3096



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1207373-02RE2

Batch: <u>F208124</u>

Sequence: 2H13011

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208124-MS/MSD2

Analyte	Sample Concentrati (µg/L)	Spike on Added (µg/L)	Conce	AS ntration g/L)	MS % Recovery	Recovery Limits	Method	Notes
Magnesium	785.0	20200	22	2190	106	70 - 130	EPA 200.8	AS
Analyte	Spike Added (µg/L)	MSD Concentration (μg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	20200	22260	106	0.339	70 - 130	20	EPA 200.8	AS

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F208014</u>

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208014-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Sodium	500.00	448	89.6	85 - 115	EPA 200.8	
Calcium	1500.0	1513	101	85 - 115	EPA 200.8	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	500.00	447	89.4	0.269	85 - 115	20	EPA 200.8	
Calcium	1500.0	1520	101	0.457	85 - 115	20	EPA 200.8	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: <u>F208032</u>

Sequence: 2H06002

Preparation: BrCl Oxidation

Lab Number: F208032-BS/BSD1

LCS Source: LCS

Analyte	Spike Added (ng/L)	LCS Concentration (ng/L)	LCS % Recovery	Recovery Limits	Method	Notes
Mercury	15.679	15.05	96.0	80 - 120	EPA 1631E	

Analyte	Spike Added (ng/L)	LCSD Concentration (ng/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	15.679	15.32	97.7	1.76	80 - 120	24	EPA 1631E	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F208124

Sequence: 2H13011

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F208124-BS/BSD1

LCS Source: Blank Spike

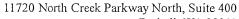
	Spike Added	LCS Concentration	LCS %	Recovery		
Analyte	(µg/L)	(µg/L)	Recovery	Limits	Method	Notes
Magnesium	250.00	252.9	101	85 - 115	EPA 200.8	

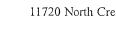
Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Magnesium	250.00	250.8	100	0.796	85 - 115	20	EPA 200.8	

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FRONTIER GLOBAL SCIENCES

Sequence: 2H05006

Preparation: Closed Vessel Nitric Oven Digestion

	Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
L	F208014-BLK1	Sodium	0.6	20	μg/L	F208014	EPA 200.8	U
	F208014-BLK1	Calcium	0.5	40	μg/L	F208014	EPA 200.8	U

PREPARATION BLANKS

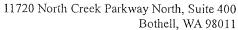
Frontier Global Sciences, Inc.

Instrument: ICPMS-6

Taw Muy

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Ph: 425-686-1996 Fx: 425-686-3096



PREPARATION BLANKS

Instrument: Hg2600-1

Sequence: 2H06002

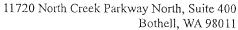
Preparation: BrCl Oxidation

Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F208032-BLK1	Mercury	0.02	0.50	ng/L	F208032	EPA 1631E	U
F208032-BLK2	Mercury	-0.02	0.50	ng/L	F208032	EPA 1631E	U
F208032-BLK3	Mercury	-0.02	0.50	ng/L	F208032	EPA 1631E	U
F208032-BLK4	Mercury	0.02	0.50	ng/L	F208032	EPA 1631E	QB-04, U
F208032-BLK5	Mercury	5.09	9.90	ng/L	F208032	EPA 1631E	QB-08, U

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Ph: 425-686-1996 Fx: 425-686-3096



PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2H13011

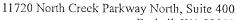
Preparation: Closed Vessel Nitric Oven Digestion

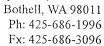
	Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
L	F208124-BLK1	Magnesium	0.6	2.0	μg/L	F208124	EPA 200.8	U

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Notes and Definitions

U	Analyte included in the analysis, but not detected
QB-08	The blank was preserved to 100% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-02	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL.
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
DET	Analyte Detected
MDL	Minimum Detection Limit
MRL	Minimum Reporting Limit
ND	Analyte Not Detected at or above the reporting limit
wet	Sample results reported on a wet weight basis
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
RSD	Relative Standard Deviation

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Page 20 of 20 1207436 Final Report 08/14/2012 BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

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					VC	C			S	VC	C		TCL	ME	TALS			N	ORC	1 A E	ИIC	S		Mı	ICRO	O	TH	ER			
Sample I.D.	Sampling Date / Time *If Composite, Indicate Both Start & Finish Date / Time	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	524.2 524.2 BTEX 524.2 MTBE ONLY	8260В (624) VIICS 1, 4 Dioxane EDB DBCP	8021B BTEX HALOS	8015B GRO MEGRO MAYPH	8270D 625 SVTICS ABN A BN PAH	TPH8100 L1 L2	80158 DRO MEDRO MAEPH	PEST 608 PCB 608 PEST 8081A PCB 8082	OIL & GREASE 1664 TPH 1664	TCLP 1311 ABN METALS	DISSOLVED METALS (LIST BELOW)	TOTAL METALS (LIST BELOW)	≅	Br (I) F 50, NO, NO, NO,NO,	ĕ	£	pH T. RES. CHLORINE	СОВ Риєногь ТОС ВОС	TOTAL CKANIDE TOTAL SULFIDE	REACTIVE CYANIDE REACTIVE SULFIDE	TOTAL COLIFORM E. COLI	ENTEROCOCCI	MELEKOTKOFHIC PLATE LOUNT			# OF CONTAINERS	N 0 Me0H V	
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